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ABSTRACT

This report is a final one in a series of 17 reports concerned with costs analysis/projections of the instructional television program and the Out of School Television (OSTV) project in the Ivory Coast. It includes an introduction to the OSTV project after its first five years of existence, a description of the main elements of the in-school reform, an outline of the progression of OSTV objectives, examples of the subject matter covered in OSTV broadcasts (Tele Four Tous), and an explanation of the role of the primary school teachers serving as animators for OSTV. The series of reports on the OSTV program are discussed in the context of a "social impact model," and each of the economic studies performed as part of this project is summarized under the appropriate educational level--costs relating to primary schooling, cost implications for secondary education, and cost analyses for out of school education. Recommendations for action are presented for each level, with the OSTV recommendations categorized by order of magnitude: those designed to improve operations and impact without incurring any sizable further resources, those which require a significant increase in resources, and those which demand higher decisions and a greater commitment by the government. A bibliography of project and related reports includes some titles in French. (Author/JEG)

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Final Report:

Economic Studies and Out-of-School Education Program Evaluation for the Ivory Coast

by

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SUMMARY

The Ivory Coast Government began instructional television broadcasts in 1971 in an ambitious program designed to greatly improve the quality and relevance of the educational system, mainly at the primary school level. The Ivory Coast is the major finance in the project, with substantial support however from the French government, UNDP/UNESCO, and the Canadian government. In 1972 an Evaluation Service was created within the Ministry of Education to monitor the progress of the ETV project, to perform surveys and studies designed to help Ivorian decision-makers improve project operations and management. A secondary audience for the evaluation studies was donor countries and institutions and the international development community in general. Educational administrators and planners in the developing world were especially anxious to follow the Ivorian initiative and to learn about costs, impact, effectiveness, benefits, and problems related to the harnessing of the mass media for national development purposes.

From 1972 to 1974, at the request of the Ivory Coast, USAID through consultants and a field representative helped set up the ETV program's evaluation unit and perform its first studies. Other participants in the international evaluation effort were the Belgian and West German governments, the former began a long-term evaluation of educational achievements through a primary school testing scheme plus other studies relating to in-school learning or teacher training; and the latter performed shorter term studies on program management, production, and feedback for the out-of-school program.

From 1975 to 1978 USAID carried out a more extensive evaluation of two aspects of the Ivory Coast's ETV program: systems costs and the organization and impact of rural adult education. The contract signed between the Agency for International Development and its contractor, the Academy for Educational Development, with a sub-contract to the Institute for Communications Research at Stanford University also included a third component, participant training. Three Ivorian students are earning Masters Degrees in Communications and the economics of education in a two-year program which involves course work in several departments, considerable data analysis from Ivory Coast village impact surveys, and field projects. The students worked for a year in the Evaluation Service in Abidjan before undertaking their out-of-country training, and will return to the Service at the completion of their studies. Three research assistants have also been trained, under the contract to develop and administer survey instruments and code and analyse results of impact studies in rural Ivory Coast. Finally, under the participant training program, forty field advisors and out-of-school television (OSTV) animators have attended workshops and administered questionnaires in their localities for the Evaluation Service.

This report is a final one in a series of 17 reports which have been produced in the two areas of cost analysis/projections and the OSTV program (Appendix B contains a list of this series of reports). The report is divided into four sections. Chapter One gives an introduction to the OSTV project after its first five years of existence. The introductory chapter describes the main elements of the in-school reform, of which OSTV is an extension; it outlines the progression of

OSTV objectives; it gives examples of the subject matter covered in OSTV broadcasts; it demonstrates the range of ministries and development agencies which have co-sponsored OSTV programs; it explains the role of primary school teachers who voluntarily "animate" OSTV evenings in their classrooms. Finally, the reader will learn of project expansion: from a staff of 30 to one of 85; broadcasts of 5 programs in 1973 to that of 40 new programs by 1977; the number of schools rising from 700 to 1650, and the number of teacher/animators from under 200 to 900. This chapter allows one to better put into perspective the analysis in Chapter Three and the recommendations in Chapter Four which discuss several facets of the adult education TV program.

Chapter Two turns attention to the series of reports on the out-of-school program. Given the larger number of reports and working documents produced and the nature of the data, it was considered more useful to apply to them a "social impact model" than simply to present summaries of the reports. The model proposes five categories for analyzing the social and educational impact of OSTV: effort, effect, adequacy, efficiency, and process.

References are made to several OSTV Evaluation reports which give evidence on OSTV's objectives, its personnel, and its products. Estimates of potential audience size from 570,000 to 1,000,000 in TV schools alone are advanced. Reports show that in spite of such numbers, the actual audience is declining, and schools do not open regularly. The composition and characteristics of the listening audience has constituted a subject of inquiry during data collection. Although the general target audience of TPT is poor illiterate villagers, the better-

off and those with some education are over-represented. Four variables which appear related to TPT attendance are sex, age, education, and wealth.

The effect which watching TPT can have on a spectator includes several stages: general awareness, precise understanding, a change in attitude, a change in behavior, a decision to do something differently, a new action and its repetition, etc. Awareness ("sensibilisation" in French) is the goal which is perhaps the best attained. Understanding was more often attained at a general level than in fine detail. Several attitudes were studied during field visits. For instance, peasants perceived TPT more as an educational medium than as entertainment. They realize that through this medium the government is speaking to them. After TV programs and related discussions, expressions of intent to take action are commonplace, yet subsequent actions are rare. The obstacles to such actions are perceived to be structural ones, lack of resources, insufficiency of technical guidance.

As for adequacy, or the practical difference that TPT makes, one can note that the TPT audience is declining and that OSTV is not meeting adequately its defined goals. Some of the reasons for this situation are the following: animators do not open their TV classroom because they are not paid and are not motivated to work at animation; village leaders do not support TPT; there is a lack of collaboration between TPT and local development agents; many TPT programs are not geared to action. Also financial and administrative constraints severely limit what actions are possible.

Efficiency in OSTV concerns its cost and how costs can be reduced or productivity increased. Areas where a small investment may increase

productivity are: repeating broadcasts, better training for animators, more support materials, and evaluation. The data generated related to costs have not included measures of effectiveness: one suggestion is advanced, nevertheless, which would have OSTV merge with similar development efforts now being made by other Ministries, such as Agriculture and Information.

The process concerning OSTV which is examined covers those constraints or problems which help or hinder the achievement of project objectives. They are divided in this section among the following categories: political priority, administration, message construction, reception, and follow-up. Although education has been proclaimed the priority of priorities in the Ivory Coast, adult education has suffered from lack of a committed policy with a high level of support. Lacking a clear mandate, OSTV besides suffering from insufficient financial support competes rather than collaborates with sister institutions. Although the construction of the TV message has not been researched adequately, the fact that pre-testing of programs is practically non-existent and that the feedback mechanism has greatly diminished means that OSTV must rely much more on subjective opinions on the quality of its messages. Typical problems encountered at the reception level consist of the present incompatibility between primary school teacher and village change agent, and secondly, the predominantly young age of TV spectators which precludes such junior village citizens from taking substantive decisions in the community. Perhaps the greatest challenge exists in the area of follow-up. The obstacles to actions being taken following TPT are structural, administrative, financial, political, and

cultural. A final category of relevance could be used to evaluate TPT programs: in this respect Evaluation Service studies have made inventories of needs expressed by rural populations and argue that an inter-ministerial body alone should not dictate solely what subject matter is covered in TPT.

Chapter Three is devoted exclusively to a summary of each of the economic studies performed under the contract. The studies are presented under three educational levels: costs relating to primary schooling; cost implications for secondary education; and cost analyses for out-of-school education. The first study (Jamison-Klees, 1976) examines the historical costs over the first five years since project expenditures began in the following areas: administration, production, transmission, reception, and printed support materials. Costs for these components of the ETV system are projected annually until 1991. In a comparison with ETV costs in four other countries, the total costs of the Ivorian project are seen to be the highest; however because of the large audience reached the unit cost, estimated at just under 5000 CFA francs, is within the range reported for other systems.

A second study (Eicher-Crivel, 1977) performs another general system-wide cost analysis and projection. Important assumptions made for their cost projections were that by 1980 solar batteries would be widely used, replacing the overly expensive alkaline batteries presently in use; and that all foreign aid will have been withdrawn. Primary education costs attributed directly to ETV are calculated at 10% in 1977, and projected at only 3% by 1990. The 1975 teacher salary increase ("décrochage") yields annual additional costs that by 1990 will equal

about 15 times the cost of all ETV system components. This study alerts Ivory Coast decision-makers to the enormous sums, especially measured in percentage of GNP relative to other countries, that its government is according to education.

A third study (Evans-Klees, 1976) treats the organization and the costs of the TV production center in Bouaké. Inefficiencies in program production are attributed to lack of sufficient planning and organization; inadequate training of nationals, and lack of a consistent policy regarding the duties of the various types of skilled personnel. The study calculates the cost of one hour of programming at 4.4 million CFA francs; this rate establishes the Ivorian project as the most expensive of six other TV-based educational programs.

A fourth study (Danière-Orivel, 1977) builds on two working documents (McAnany, 1977; Wells, 1977) in presenting alternative pedagogical and cost scenarios for secondary education. The two key variables which must be considered by Ivory Coast authorities because they have effects on cost are the rate of access of primary school graduates into sixième and the amount of repetitions allowed students in CM2. Different hypotheses for these two features produce different cost alternatives. Although large-scale expansion of traditional school is not postulated, some form of post-primary education, labeled "complementary cycle" and composed of general education or work-oriented components, is introduced and costed. Three different educational settings -- a regular secondary school with qualified teachers; a community school with primary school monitors; "distance education" with reliance on media -- also provide alternatives which are examined along with their cost implications. Finally, three "mixes" of educa-

tional technology are hypothesized, having marginal, moderate, or extensive recourse to media. Of the one hundred possible alternatives from combinations of the preceding variables, considered the key variables in rational decision-making about secondary school expansion, the most important twelve are examined in detail. The authors favor an option which expands the access rate to regular secondary school, has a liberal repetition policy, uses both traditional and ETV based technologies, and has lower costs than most of the other options considered.

A fifth cost study (Klees, 1977) is on the out-of-school education program. General system costs are estimated by two different methods: by assuming in one case that both audience and animator time have alternative uses of social value and therefore should be costed; and in the other case that these variables are costless to society. For example, the average total cost per program broadcast is calculated as 6,900,000 or as 15,000,000 F CFA, according to the two assumptions. The study finds the Ivorian out-of-school TV project costs substantially higher than the costs of other similar projects elsewhere.

Chapter Four pursues the analysis of the first chapters to their more constructive end: a series of recommendations for action, in both the cost and the OSTV fields. The cost recommendations are divided among the three areas of preceding analysis: primary schooling, secondary schooling, and out-of-school education. Where possible, reference is given to the specific report which included the recommendation.

The recommendations for OSTV are presented in a different manner in an effort to "package" the suggestions according to different orders

of magnitude. First a series of recommendations is tendered which are modest and which are designed to improve project operations and impact without incurring any sizeable further resources. A second series of recommendations touches on changes which go beyond the current mandate of OSTV and require a significant increase in resources from the Ministry of Primary and Television Education. Finally, a third series of recommendations demand higher decisions and a fundamental commitment by the whole government to a new model of OSTV organization and operations.

CHAPTER ONE

INTRODUCTION

The Out-of-School Educational Television Project

On Wednesday and Friday night after the evening news TV viewers in the Ivory Coast can watch a half-hour program called "Télé pour Tous" or TV for Everybody. This program is primarily designed for reaching the out-of-school audience of (rural) adults and youth of 15 years and older with educational and informational messages. The TPT or out-of-school television has broadcast on a wide variety of subjects: agricultural cooperatives, child nutrition, tourism, household budgeting, home construction, livestock raising, waterborne diseases and their prevention, rural exodus, handicrafts, urban delinquency, employment and training, environmental protection, civics, and folklore.

The TPT programs, cast in dramatic or didactic molds, and accompanied by French commentary, can be received on the estimated 200,000 privately owned television sets as well as in the approximately 1,800 urban or rural primary schools which are equipped with a TV receiver. In a number of TV schools one of the local primary teachers organizes a group of people who watch the TPT programs together. After the broadcast, group discussion takes place concerning the topic of the program, the relevance of the topic for the local situation of the spectators, and means whereby possible lessons can be implemented under the local circumstances.

The TPT programs are produced by a department of the Ministry of Primary and Television Education which is officially charged with the

> Production and broadcasting by the mass media of educational messages aimed at school audiences and adults, and in particular with the coordination of National Television Education.[1]

The Ministry of Information makes available its transmission facilities, which at present cover about 80 percent of the country with the TV signal.

The Out-of-School Television operation (l'Education Extra-Scolaire) is a relatively recent phenomenon and is only a small component of the larger Educational Television Program (Programme d'Education Télévisuelle). Ivorian ETV started in September 1971. It was not the first experience using television for educational purposes. The Ivory Coast had closely followed the experimental primary school television project in neighboring Niger, and it had experimented itself with literacy courses via TV for urban factory workers[2] and with a televised review course for the final year of secondary school pupils in the mid-sixties.[3]

The educational ills of a high repeater and drop-out rate, an insufficient number of (qualified) teachers, a colonial curriculum, regional disparities in levels of enrollment, a rural exodus of schooled youngsters to urban areas, and the limited opportunities for further education at the secondary level urged a new direction in the policies of educational expansion and curriculum during the late sixties. "The fundamental argument for an educational reform using ETV was that the increased quality of teaching which would result, combined with a more adapted curriculum, would permit a policy of automatic promotion from one grade to another and would more or less eliminate the drop-out

problem."[4] It was argued that the inevitable add-on costs of introducing TV and of improving both qualitatively and quantitatively teacher training would be insignificant in relation to the savings in unit cost gained by automatic promotion.[5]

The ETV reform implied over a 13-year period: "revising the traditional curriculum, tripling the number of pupils, teachers and classes in the primary school system; making TV receivers and printed material available to all those classes; and substantially improving teacher qualifications."[6]

The end of the 1976-77 school year witnessed the first cohort of ETV primary school pupils to graduate from 6th grade and enter secondary school. At that moment attempts were made to introduce audio-visual components and approaches into the secondary school pedagogy in order to maintain and expand the "gains" which had been made in primary school television education.

In the 1976-77 schoolyear programs were broadcast for 327,245 students in 7,533 classrooms[7] in about 1,800 public primary schools, 20 percent of which were located in urban areas and 80 percent in rural areas (villages). Daily, six to eight 5 to 10 minute programs dealing with French, Modern Mathematics and Etude du Milieu are broadcast for each of the six grades of primary school, and on Thursday mornings special teacher upgrading programs are scheduled.

All the programs are produced in Bouaké, in the center of the country, 200 miles north of the capital Abidjan. Here a brand-new TV production Complex is located, which has been constructed and equipped with major financial and technical inputs from the World Bank,

the French government, and UNESCO. The Canadian government funded the construction of a printing facility in Bouaké for the production of the large amount of printed material accompanying the ETV programs for pupils as well as teachers.

In an effort to reduce the need for maintenance, the TV receivers are "tropicalized." They are simple to operate, while the back of each set contains a "black box" with the essential electronic elements. This box can be easily removed and replaced when necessary by traveling maintenance teams.

Most of the TV receivers in the villages which do not have electricity are hooked to a set of 32 alkaline batteries with an average useful life of two years.[8] On an experimental basis a few receivers operate on solar batteries. At present those batteries are technically ill-adapted and relatively expensive. New technological developments, however, make it likely that the replacement of the alkaline batteries by solar energy sources will become feasible in the early 1980s.[9]

The installation and maintenance tasks of the ETV system are assigned to a private company, Compagnie Africaine de Télévision (CATEL) which was founded for the specific purpose, and which operates a fleet of maintenance trucks in the country and a repair workshop in Abidjan.

"To complement the reform at the primary level it was proposed to use the TV reception network and the production facilities to provide an out-of-school, vocationally based, part-time education for primary school leavers who would not continue in the formal educational system and for rural and urban disadvantaged youth."[10] The Five-Year Plan for the period 1971-75 outlined the following objectives of this post-primary or out-of-school education:

- to assure a means of personal development for young school leavers in their own milieu, and thus to promote the society of which they form a part;

- to facilitate their integration into their own milieu;

- to direct the ambitions of a larger number of people toward an improvement of the rural environment and the development of modern agriculture.[11]

Kaye (1976: 151) comments that there is "a certain irony in the idea of using one of the main elements of the primary school system - television - to persuade youngsters to remain in the environment from which the primary school is seen as one of the main means of escape." It was hoped that this program would provide general training aimed at applying the skills taught in the primary school to everyday life.[12]

The Out-of-School Television Project started in January 1973 with the establishment of a department within the Ministry of Primary and Television Education responsible for out-of-school education, and with the broadcasting of some "experimental" programs. Initially no specific objectives for out-of-school TV (OSTV) were formulated. Nonetheless, some principles which would govern the operations set forth were

- collaborate with technical agencies and ministries in developing and producing TV programs, and respect their competencies;

- assure the educational and televisual quality of the broadcasts and organize the necessarily communal reception of the programs through the network of the primary TV schools.[13]

A principal purpose of the TPT programs was also to utilize the slack capacity of the ETV system.[14] The first "experimental" phase in May-June 1973, with 175 school teachers as animators and 5 TV broadcasts, was followed by the second "experimental" phase in the 1973-74 schoolyear

with 12 programs. Producers used the feedback information of the first phase and stressed the efficient cooperation with the ministries and outside agencies. During this period feedback and observation studies were conducted which identified the variables important for the understanding of the impact of the TPT programs, or absence thereof.[15]

At the beginning of the first operational year, 1974-75,[16] the TPT production teams and facilities were transferred to Abidjan in order to be closer to the collaborating agencies and to the broadcast facilities of the National radio and television organization (RTI). Close contact with the RTI was necessary because the TPT programs are part of the regular TV broadcasting schedule beamed over the single channel.

During the first operational year a total of 36 new TPT programs were produced. The number of new productions in 1975-76 was 35 and in 1976-77, 40. In order to give an overview of the development of the Out-of-school TV system, we present in Table 1 the number of TV schools, the number of identified animators, and the number of new productions and reruns.[17] Table 1 shows that the OSTV system has expanded in the first 4 years of its existence, in terms of the number of potential communal reception sites (TV schools) and the annual total number of TPT programs. It seems, however, that in 1975-76 the system reached its peak in terms of the number of teachers who volunteered (or were designated) for animating the TPT sessions, and the maximum number of TV schools opened on one TPT broadcasting evening.[18] A similar decline has been observed in the estimated TPT attendance figures based on the

TABLE 1

Number of TV Schools, TPT Animators, TPT Schools and TPT Programs

Year	Total number of TV schools	Number of identified animators*	Maximum number of TPT schools for one telecast (est.)	Minimum number of TPT schools for one telecast (est.)	Number of new TPT programs	Number of TPT program repeats	Total number of TPT programs broadcast
1973	700	175	35	35	5	0	5
1973-74	950	400	50	135	12	0	12
1974-75	1,152	658 (est.)	468	65	36	5	40
1975-76	1,481	899	566	81	35	5	40
1976-77	1,652	(?)**	406	41	40	13	53
					128	22	150

* Who reported to have animated at least one TPT session

** Since all teachers were supposed to be responsible for animation, no fixed number could be established.

OSTV feedback system operated by the Evaluation Service of the Ministry of Primary and Television Education. While the annual average number of reported spectators increased by more than 400 percent between 1973 and 1973-74 and by 22 percent between 1973-74 and 1974-75, the increase stagnated in 1975-76 and there are indications that there was a big drop in 1976-77.[19]

When comparing the increase in the number of TV schools and the potential audience increase on the one hand with the recently stagnating and declining audience figures, it is evident that over time the TPT programs are reaching an increasingly smaller proportion of the target population with access to a TV school. Between 1974 and 1977 this proportion declined from almost 9 percent to barely 1 percent.[20]

The absence of explicit educational and informational objectives in the second experimental phase was redressed in subsequent years. Each year an evaluation of the foregoing year produced a document in which the main objectives were (re)formulated. The 1975 document states that the TPT programs constitute an educational action,

> which will allow all Ivorians, urban as well as rural, to understand the development actions, to participate actively in the improvement of their situation and a better distribution of the fruits of economic progress.[21]

The objectives were specified in 1975-76 and 1976-77 by stating that the TPT goal is to familiarize the population

> with the economic, political and administrative structure and to motivate them to make use of the Services.[22]

and

> to promote awareness and analysis of existing situations, and search for adaptive solutions in the perspective of integration into the modern world without abandoning certain traditional values.[23]

From these objectives and the actual programming one can conclude that OSTV has pursued 3 kinds of objectives: awareness creation, knowledge transmission, and action.[24] Research reports[25] have demonstrated that whenever there is an impact of the TPT programs it is much more likely to occur in the domain of sensibilisation (awareness) than in learning or action. The latest "objectives" document[26] shows more clearly than before that the prime goal of the TPT programs is sensitization, information and familiarization.

Another important aspect of the OSTV operation is the collaboration with ministries and agencies. The OSTV, after spontaneous and tentative contacts with ministries and development institutions, is trying to structure this collaboration in terms of financial participation as well as of integration of the TPT programs in larger "projects."[27]

In Table 2, we have listed the names of the agencies and ministries who in the period 1973-1977 financially sponsored and technically counseled the OSTV, and the approximate number of TPT programs to which they contributed. (For some programs we were not able to determine exactly the sponsor(s), and therefore the already impressive list of 24 agencies could be even 30 or 35 in reality.)

The 128 TPT programs (see Table 1) produced during the four year period can be classified according to themes, as has been done in Table 3. The classification of Table 3 is somewhat arbitrary because different programs can be evaluated according to different criteria. For example, a program on latrine construction, broadcast in the series on Rural Housing in the 1975-76 season,[28] could also be considered a housing program or a program dealing with (polluted) water or health and hygiene.

TABLE 2

List of Ministries and Agencies who collaborated with the OSTV in the period of 1973-1977, and the estimated number of TPT programs for which they provided financial and technical aid

National Office of Rural Promotion (ONPR)	35
National Committee for Nutrition and Development (CNAD)	29
Regional Funds for Rural Development (FRAR)	27
National Institute for Public Health (INSP)	23
Ministry of Agriculture	19
Ministry of Animal Production	18
Ministry of Popular Education, Youth and Sports	18
National Rural Development Bank (BNDA)	10
Direction for Territorial Development and Regional Action (DATAR)	9
Ministry of Construction and Urbanism	9
United Nations Development Program (UNDP)	9
National Cooperatives Center (CENAPEC)	8
Technical Assistance Company for the mechanization of agriculture in the Ivory Coast (SATMACI)	8
Company for the Development of Animal Production (SODEPRA)	7
National Office for Handicrafts	5
Research and Development Company for the Coffee and Cocoa Industry (SERIC)	4
Ministry of Primary and Television Education	4
Ivorian Company for the Development of Textile Fibres (CIDT)	4
Ministry of Environmental Protection	4
National Office of Professional Training (ONFP)	4
Ministry of Social Affairs	3
Ministry of Tourism	2
Anti-Tuberculosis Committee	1
Federation of Village Groups in the Bouaké Region	1

TABLE 3

Subject Area and Number of TV Programs Produced 1973-77*

Subject Area	1973-74	1974-75	1975-76	1976-77	Total
Agriculture	6	6	9	4	25
Health, Hygiene	4	5	9	1	19
Water Resources	1	14	1	0	16
Folklore, Traditions	2	7	2	2	13
Housing	0	0	9	0	9
Education	2	0	1	5	8
Budgeting, Banking	0	0	4	3	7
Livestock Raising	0	0	0	7	7
Urban Life	0	1	0	5	6
Feedback to Viewers	1	1	0	3	5
Labor	0	0	0	3	3
Environment	0	0	0	3	3
Miscellaneous	1	2	0	4	7
Total	17	36	35	40	128

*This table is a copy of Appendix C in Grant (1977).

However, if we look for larger clusters of programs we find two main concerns which permeate a large majority of all programs, namely the concern about money (the lack thereof or the method for increasing cash income) and the concern about good living conditions. The former category comprises 33 percent of the TPT programs and deals with agriculture, livestock raising, home budgeting and savings and banking. The latter category contains the 34 percent of TPT programs dealing with health, water and housing. A smaller cluster (13 percent of all programs) contains programs on folklore and traditional Ivorian culture.

When comparing these figures with the objectives of the TPT programs described above, we see a high degree of correspondence between them. Moreover, this fit is not restricted to the internal operations of the OSTV, but there also seems to be an external correspondence between the TPT programs and some of the main concerns and problems of the rural population. It should be immediately added, however, that the "desire" of the population for literacy training has not (yet) been met by any TPT program.

To summarize this brief description of the OSTV operation, it can be concluded that out-of-school educational television for adults in the Ivory Coast has rapidly expanded over the last five years in terms of its physical reception network, the number of TPT programs produced and (re-)broadcast, the number of outside agencies which sponsor the TPT programs, and the number of the OSTV employees. From a mere 23 the OSTV staff has expanded to about 100 in 1977. Table 4 depicts this distribution over the diverse OSTV sections. It must also be remarked that recently the OSTV has started an effort to make more profitable use

TABLE 4

Growth of Out-of-school Department Personnel

1974*

	Administration		Production
1	Director	1	Director
1	Secretary	2	Assistants
1	Chauffeur	4	Members production team
1	Messenger boy	5	Members filmmaking team
4	Typists	(12)	
1	Accountant		
1	Press secretary		
1	Film librarian		
(11)			

	Animation		Research
1	Director	1	Director
1	Technical assistant	1	Assistant
3	Printed materials specialists	(2)	
(5)			

Total = 30 persons, among whom 7 expatriates (23%): All expatriates are French and include:
1 Production Director
1 Animation Technical Assistant
1 Film Producer
1 Research Director
2 Film Directors
1 Photographer

*Source: Note de Service No. 1/74, 10 December 1974, Out-of-School Department, Abidjan.

1975*

	Administration
1	Director
1	Secretary
5	Chauffeurs
1	Accountant
1	Film librarian
4	Typists
1	Press Secretary
(14)	

	Production
1	Technical advisor
5	Film producers
5	Film directors
1	Assistant film director
2	Cameramen
1	Assistant cameraman
2	Graphists
2	Film editors
1	Photographer
3	Trainees
(23)	

	Animation
1	Director
1	Technical advisor
9	Animation specialists
(11)	

	Research
1	Director
1	Psychologist
(2)	

Total - 50 persons, among whom 12 expatriates (24%). All expatriates are French with the exception of two U.N. volunteers who are American. They include:

1 secretary
1 film librarian
1 production advisor
1 film producer
4 film directors
1 film editor
1 photographer
1 animation advisor
1 research director

*Source: Ministry Note, 1 March 1975.

1976*

Administration		Production	
1	Director	1	Director
1	Technical assistant	1	Technical assistant
4	Coordinators	5	Film director
2	Broadcasters	5	Assistant film directors
6	Chauffeurs	5	VTR operators
4	Secreteries	1	Scriptwriter
2	Film librerians	5	Sound operators
		2	Control room operators
(30)		4	Cameramen
		2	Graphists
		2	Photographers
		6	Film editors
		(39)	

Animation		Research	
1	Director	1	Director
9	Printed materials specialists	5	Researchers
6	Animation specialists	4	Feedback specialists
(16)		(10)	

Total = 85 persons, among whom 10 expatriates (12%): All expatriates are French with the exception of a Senegalese Research Director under local contract. They include:

2 Film Directors	2 Researchers
2 Technical Assistants	1 Sound Operator
2 Film Editors	1 Photographer

*Source: Personnel chart posted in out-of-school department.

of videotape equipment (instead of exclusively 16 mm film) for its ordinary TV productions as well as for specific programs for limited audiences. Although the number of potential TV audience has increased, the actual attendance of the TPT sessions in local TV schools has stagnated and even declined over time, despite the fact that the TPT programs seem to have a certain relevance for the situation, especially of the rural population.

FOOTNOTES

1. Ivory Coast Government Decree No. 77-147, March 9, 1977.
2. UNESCO/IIEP, 1967: 129-135.
3. Kaye, 1976: 147.
4. Op. cit.: 148-49.
5. Op. cit.: 149.
6. Op. cit.: 150.
7. Eicher and Orivel, 1977: 9 and 13.
8. Op. cit.: 26.
9. Op. cit.: 29.
10. Kaye, 1976: 151
11. Ivory Coast Republic, 1970: 394.
12. Ivory Coast Republic, n.d.
13. Ivory Coast Republic, 1973.
14. Grant, 1974a: 3. This more efficient use of the ETV capacity was already suggested by Messier (1971). Kaye and Lenglet (1975: 64) conclude that the TV medium was looking for a goal instead of the reverse: a goal looking for a medium. Grant (1977: 55) remarks that "television was selected for these purposes not because it was proven the most effective medium from an experimental test or a comparative study which might have looked into radio as the major technology."
15. Grant, 1974b; Benveniste, 1974, Duponchel and Lombardt, 1974. Many of these variables, i.e., animator-training, language and translation, sociological position of the school, out-of-school pedagogy, (lack of) follow-up activities, appear over and over again in different research reports: Lenglet, 1976; Grant and Seya, 1976; Benveniste, 1976; Etaix and Lenglet, 1977.
16. See Kaye and Lenglet, 1975.
17. During the schoolyear. Reruns are also shown in the school vacations.
18. For possible explanations of these tendencies, see: Grant and Seya, 1976; Yao, 1976; Etaix and Lenglet, 1977.

19. The average annual attendance figures are: 1973: 2,520; 1973-74: 13,090; 1974-75: 16,024; 1975-76: 15,725; 1976-77: 5,296.

20. Etaix and Lenglet, 1977; Fritz, 1976.

21. Ivory Coast Republic, 1975.

22. Ivory Coast Republic, 1976: 2.

24. Ivory Coast Republic, 1977: 2.

24. Kaye and Lenglet, 1975.

25. Lenglet, 1976; Grant and Seya, 1976; Etaix and Lenglet, 1977.

26. Ivory Coast Republic, 1977.

27. Ivory Coast Republic, 1977: 2-3.

28. For a discussion of the impact of this series, see Seya and Yao, 1977: 27-55.

CHAPTER TWO

SOCIAL IMPACT OF THE OUT-OF-SCHOOL TELEVISION

Introduction

This final report on the social and educational results of the Out-of-School Television will base its conclusions on the approximately 15 to 20 research reports generated during 2 1/2 years of work (October 1974 to June 1977).* It is not the purpose of this section simply to summarize the findings but rather, in the light of these findings, to describe what has taken place within the Out-of-School Television Project (OSTV) and to estimate the impact its TV series Télé pour Tous (TPT) has had on its audiences. In the final section of this report, the conclusions of this chapter will lead to a series of recommendations for improving the impact of both OSTV and its television series.

From the early stages of the television project in the primary schools, beginning in 1970, the Ivorian government made efforts to begin an evaluation unit that would examine the process of implementation, check on the ongoing television teaching, give periodic reports on impact and problems encountered and, finally, to create an Ivorian corps of evaluators and researchers to carry on this work in the future. The history of these developments is given elsewhere (Kaye and Longlet, 1975 and Grant, 1977). What is important to recall is that the two and a half years of field work reported here formed part of this

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*Appendix B of this final report lists these reports.

evaluation effort and it is within an evaluation framework that conclusions about OSTV and TPT need to be replaced.

There are many kinds of evaluation that can be done, but an important distinction is often drawn between formative and summative evaluation of social projects: formative is that kind of evaluation which attempts to gather information of immediate results in order to help with the improvement of the ongoing project; summative is that kind of evaluation that attempts to look at longer-term project outcomes under a more controlled and rigorous methodology usually trying to assess the causal relation between the project activities and measured outcomes. Both of these kinds of evaluation effort were made during the first three years, in addition to the important element of training Ivorian personnel in evaluation and the institutional development of the Evaluation Unit itself, but for the purposes of this section the concentration will be on the more summative side of evaluation.

Suchman (1967) has proposed five categories of summative evaluation that respond to five kinds of questions one might ask of an intervention concerning its social or educational impact. These categories are effort, effect, adequacy, efficiency and process. The first question is asking what was done, how many programs were made, of what kind, how many persons have been part of the audience and who they were. The second question asks whether this effort has had measurable effects on the audience. The third question takes the same question of effect and asks whether the effects are likely to make a practical difference or, putting it another way, whether there

is any significant social impact due to the treatment. The fourth question concerns the costs (social and monetary) of the project and considers what those costs are in relation to the effects or benefits and whether some alternative way of doing the same thing, or an alternative investment of the time and money, may not have been more useful. Finally the last question tends to qualify the answers to the first four questions, asking what social processes might impede or mediate the outcomes and help explain why things happened the way they did. In the following parts of this section, a brief summary of the evidence available on each of these points will be made and certain conclusions drawn on the basis of this evidence. The research performed under this contract has concentrated on the effort and the process questions with also considerable attempt to answer the effect question; somewhat less emphasis has been laid on the adequacy question and least effort was made to find information about cost and cost-effectiveness.

A final introductory comment. The results, conclusions and recommendations have two distinct audiences in mind. The OSTV and the Ministry of Primary and Television Education will be able to adapt the contents of this final report to the present operation of the out-of-school program as well as implement changes in its activity and structure to better serve the needs of rural adults and youth. Another major audience is the U.S. Agency for International Development and other such institutions who will read the results for what they can tell them about whether or how to create other projects of a similar kind in other countries.

1. Effort: What did OSTV do, who did it reach?

It is a cardinal rule in evaluation that the researchers judge the program outcomes in the light of stated goals. But it is also a principle of practical evaluation experience that these goals are notoriously difficult to specify and that they change over time. Both of these practical principles were confirmed in the OSTV project as considerable effort to analyse goals seem to indicate (Kaye and Lenglet, 1975; Grant, 1977). In brief, there were, over a period of almost ten years (1968-77), a number of different policy statements about goals which Grant (1977) summarizes as touching on specific areas of economic, social and political benefits. These areas were as follows: increase agricultural productivity (1977)*, make investment in the ETV system more cost-effective (by including adult audiences) (1975), inform and educate the population (1977), improve the living conditions of the population in areas like health, housing, water supply (1977), stem the rural exodus (1975), encourage reflection, dialogue, participation in civic affairs (1975), and encourage a certain value system (1977). The target audience has de facto been adults in both village and town but with special emphasis in rural areas. There has been intermittent discussion about whether youth should have a separate TV series dealing specifically with their problems or perhaps even having a post-primary training scheme (Danière and Orivel, 1977) and in 1977 OSTV resolved to take on this task although no concrete plans for it have yet been made.

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*A year will be designated to indicate when the particular goal was last officially affirmed.

What has been done? The introduction to this final report summarizes briefly both the history of the OSTV (cf. Grant, 1977 for more detail) and the expansion of the organization itself (Table 4), the number of programs produced (Table 3) and the potential audiences that could be reached especially through the TV sets in the rural primary schools. As it stood at the end of the 1976-77 program year, over a five-year period OSTV has grown from a few members making experimental programs to an organization with 85 full-time employees, producing 40 new programs a year and broadcasting 53 programs (with some reruns) with the potential of reaching an audience of about 570,000 in 1,652 TV schools throughout the country.* This growth represents a quite impressive accomplishment in itself. But the evaluation task does not allow one to stop with the description of what was done but to ask questions about the quality of what was done, the strength and viability of the organization, its financing, the costs of what was done, and, of course, the results of all these efforts. Before looking at others of the evaluation questions there is a further question to be answered under "effort".

How many people and Who does OSTV reach? The question of audience size is of concern to any social intervention but when that intervention is primarily through a mass medium like television the question is of even more importance but of greater difficulty to determine.

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*This is an estimate from Etaix and Lenglet (1977). Lenglet (in press) makes a higher estimate of about 1,000,000.

There are several sources for estimate of the audience size (IIOP, 1975; Fritz, 1976; Lenglet, 1976; and Etaix and Lenglet, 1977). One should begin with a distinction between two kinds of audience: those who have access to a privately owned TV set (estimated to be about 200,000 in 1977 - mostly concentrated in urban areas), and who do not participate in the planned discussions following TPT programs and those who attend a community listening group in the primary school classrooms.

The estimate of 570,000 as the potential audience (Etaix and Lenglet, 1977, p. 135) is based on assumptions about the population within walking distance of the 1,652 TV schools in 1976-77. This does not include the much larger audience who own private sets but who are not part of the target audience. The estimation of the actual audience is qualified by a series of assumptions since there is no single source that can provide a perfect estimate.* Etaix and Lenglet (1977) provide the following estimates in Table 5. The large gap between actual and potential audiences is indicated by the percentage figures in the right hand column. There are two main and a number of sub-hypotheses to explain this gap, and these will be reviewed more at length under question five on process. But at this point one can say with a certain amount of confidence that schools do not seem to be open regularly and even when they are, people seem to be showing up in declining numbers. This means that despite growing numbers of

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*The 1975 IIOP survey was supposed to be a national sample, but it did not provide a description of its method for drawing a rural sample which is of key importance to OSTV.

TABLE 3

National TPT audience figures for the years 1973-1977

Year	Total No. of TV schools	Range of TV schools with animation	Average No. of participants	% of target population reached *
1973	700	35	2,520	--
1973-74	950	135-160	13,090	5.0
1974-75	1,152	65-468	16,024	5.0
1975-76	1,481	81-564	15,725	3.3
1976-77	1,652	41-406	5,296	.9

*Target population with access to TV school: 319,280 in 1974-75
471,720 in 1975-76
571,960 in 1976-77

Source: Fritz, 1976 and Langlet (forthcoming).

NOTE: The target population with access to a TV school is estimated on the basis of four variables: the number of rural TV schools times the estimated average total number of inhabitants in a village with a TV school in a given year, and the number of urban TV schools times the estimated average total number of inhabitants living in the neighborhood of an urban TV school. We assume that only the persons of 15 years and older but under 60 should be considered potential TPT spectators. This group forms about 47 percent of the total population. Therefore the target population with access to a TV school is 47% of the total population with access to a TV school.

schools in villages where TV has come for the first time, audiences are attending in fewer numbers on the average and even total audiences are down.

The second question concerning who makes up the target audience is an important one for several reasons. First, the definition of the target audience contains assumptions about goals. OSTV has assumed that its audience would be those people served by the public TV sets in primary schools and served by animators. It has also built into its programs a range of topics meant more for the rural than the urban audience. If it is discovered that the people for whom the programs are made are not attending TPT viewing sessions, then there is no chance for OSTV to achieve its goals. A second reason for looking closely at who makes up the audience of TPT is that certain social and demographic groups are more appropriate for putting certain behaviors into practice than others and if they are largely absent, then again the objectives of OSTV cannot be achieved. Thus if, as some suspect, the larger part of regular TPT audiences are children or young men, then farming and hygiene practices that might be most appropriately adopted by farmers or housewives will fall upon deaf ears. Finally, there is a question of equity that touches on who watches TPT. If, as has been the experience in many other communication and innovation projects (Rogers, 1976), TPT programs appeal only to the better off among the rural audiences (i.e. those who are better educated, have more land, larger incomes or higher social status), then these programs could contribute to widening the gap among different rural groups.

The answers to these questions have been a continuous concern to evaluators since the first year of regular broadcasting in 1973-74 (Grant, 1974). At that time researchers voiced the concern that the selection of the audience not neglect the less favored members of village society: women, girls, school dropouts, the old, migrants, etc. In subsequent years with an improved feedback system and from a number of special studies undertaken for a variety of research reasons (Fritz, 1975; Lenglet, 1976; Etaix and Lenglet, 1977; Seya and Yao, 1977), a fairly consistent picture about audience composition has emerged.

It should be noted to begin with, however, that these findings are limited by both the methodology of the studies and the time they were collected. Audience composition undoubtedly varies somewhat from program to program, and series to series and year to year. What is reported here would be the longer term audience compositions.

There are eight demographic variables that seem most important in examining the characteristics of TPT viewers.* These are: sex, age, education, profession, wealth, religion, ethnicity and political status. A concensus among the research studies (Lenglet, 1976; Fritz, 1976; Etaix and Lenglet, 1977; Seya and Yao, 1977) suggests that sex, age, education and wealth may be significantly related to TPT attendance but not profession, religion, ethnicity nor political status. What does this mean in practice? Men seem to attend TPT sessions much more than women. The age factor is less certain, but it seems that

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*Etaix and Lenglet (1977) established a large overlap between TPT and TV viewers; thus no separate discussion will be devoted to TV viewing.

the audience is a younger one than one would expect (also that audience size is suspected to be augmented by large numbers of children). Although the general rural target audience of TPT is largely illiterate, the proportion of persons with some education is over-represented. For the single study that included some measure of income (Etaix and Lenglet, 1977), the better-off also seem to be over-represented. There are in many of the studies explanations of why this should be so, but here one might only reflect for a moment on what this might mean for OSTV and similar projects.

The selection process for most mass media is up to the individual but participation may be constrained by problems of the cost of access (buying a TV set) or education (being literate to read or knowing French to listen to most Ivorian broadcasting). Seya and Yao (1977) provide some notion as to how self-selection takes place regarding different mass media. TPT, however, is not only a mass medium but one to which access has been assumed by the opening of public school TV sets. More than this, there is some opportunity for OSTV to choose a target audience and not only make programs that might appeal to that audience's needs and interests but also to actively recruit the audience to participate. If it is recognized that the actual audience does not correspond to the target audience, then two actions are possible: either attempt to find out the needs and interests of the actual audience to provide programs and services that would serve their needs and interests; or attempt to actively recruit members of the target audience to participate.

2. Effect: What and How much impact has TPT had on audiences?

The measurement of effect in an evaluation assumes that some kind of causal model is being tested. In this case the evaluation assumes that the effect or part of the effect is a consequence of TPT viewing and animation. There are a series of hypothesized effects that could follow from viewing TPT: an awareness of the general message, understanding of the principles or mechanisms being demonstrated, a change of attitude about a behavior or situation, a decision to do something about this situation, the action performed and the various consequences of this action and its repetition. Viewed in this way one can see that there is a time dimension within the effect chain and that one can measure at various points in time with the expectation that different effects may be found. One important previous link in this chain has already been examined, exposure to the TPT programs themselves. Within the two and a half years of field work being reported here there were several attempts to study the various stages of effect or impact and these will be reported below under the various stages outlined.

Awareness: This is the most general and simplist of the goals outlined by OETV. It is an attempt to sensitize (sensibiliser in French) the audience about a particular social or economic problem (clean water, for example), provide some information about its details and suggest some possible solutions. The research results indicate that of the audience that TPT reaches the awareness objective is perhaps the best attained. Longlet (1976) in his study of the long

TPT series on water concludes this as do Etaix and Lenglet (1977) in their two 1977 surveys. Two caveats need to be made, however. It is difficult to sort out the causal influence of TPT in the creation of this awareness because there are a number of other elements in the environment that could also be responsible, including extension agents, training courses, printed materials, radio, informal communication and school children. Second, the awareness of the problem, at least, is something the peasant probably does not need to be told about. Etaix and Lenglet (1977), for example found a large overlap in both village leaders' and individual's awareness of problems that rural people face, quite apart from watching TPT or not. The added element in TPT's awareness creation objective is to suggest some possible actions and agencies to help resolve the problem. This itself causes some problems, however, if means are not available for problem solution, as will be suggested below in this section under actions as well in the final evaluation question about process.

Understanding: There have been two approaches to measuring understanding, a formative evaluation of different television and fixed images (Bisiliat et al., 1975a, 1975b, 1975c) and some evaluation questions about general comprehension and recall by Lenglet (1976) and by Etaix and Lenglet (1977). There are two reasons why more learning testing was not undertaken.* First, the nature of TPT goals as they have been defined have not been instructional and there are few places where the comprehension of detail is called for in subsequent action.

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*Faustin Yao is completing a learning study at present (January, 1978) but the results are not available for this report.

Since awareness is the primary goal, the audience is expected to be broadly informed about a problem and then to be motivated to follow up by seeking help from the animator or field agents. A second reason is that testing of learning with a largely illiterate audience that speaks one of sixty local languages promised to cost more in time and resources than it was worth. Etaix and Lenglet (1977) provide what little information of a more general nature that is available. They conclude: "... judging TPT on the basis of the two surveys, we can say that it has some impact on those who view in terms of retention and recall of general topic areas like agriculture and water; it also seems to help viewers recall specific pieces of advice..." (p. 159). The earlier mentioned formative evaluation on message (image) comprehension seemed to indicate that people understood the general gist of the message but not the fine detail.

Attitudes: There are several important attitude areas relating to TPT that were examined. The first concerns the attitudes of the audience about how it perceives TPT. Etaix and Lenglet (1977) report that in general the individual attitude is favorable about TPT. Peasants believe in the truthfulness of television and of TPT, and they perceive it as more of an educational than an entertainment medium. They also think that TPT is a program that is made for them as rural people, showing mostly programs about villages and their problems. The second area concerns the general attitude of peasants about modern, "city" life. Even though TPT attempts to show the realities of rural life, it also tries to offer possible solutions

to the problems and the difficulties of life in the city (e.g. the 1977 Sikatio series). Nevertheless, many people fear that by providing peasants with television (even if it were confined to TPT watching, which it is not), they will be attracted even more to the overcrowded cities. A series of indirect questions in this area revealed to Etaix and Lenglet (1977) that there was an urban bias, an admiration of "city" ways. Peasants have this attitude from many sources but TPT may reinforce it. On the negative side of the self-image, one recalls an incident reported by Grant and Seya (1976) where one peasant complained that peasants were portrayed in TPT programs as dirty and unreliable. That attitude may not be shared by all rural people but it may reveal an underlying attitude of distrust that is not usually reported in a survey. Finally, in an area that has not been researched, there is the question of how all TPT spectators, urban and rural, private and communal viewers perceive the role of TPT as an official message from the government. There is no doubt that under proper conditions it is a good medium to attract a significant audience, put the government's development goals and approach across and convince people that the government is concerned about the rural masses. How such messages relate to the practical actions and solutions of rural problems is related to the next section on decision and action following TPT viewing.

Decision and action: In the light of stated OSTV goals, the key element in impact is the change in behavior, whether it is to buy a water filter, roof the house with corrugated iron or start a savings account. There was a serious attempt to follow up on impact at this

level by Lenglet (1976) and Grant and Seya (1976) studying the water series. In addition Etaix and Lenglet (1977) not only asked about actions but probed responses. Moreover, there are a number of affirmations by animators about the decisions and actions taken by their groups. The results seem to be that intentions are positive but that actions are very limited. Positive intentions probably indicate some comprehension of what the message was but general lack of action points to a series of obstacles that are more relevant to question five on process but should be mentioned briefly here. Lenglet (1976) and Grant and Seya (1976) did a careful job in following up the results of the long water series in 1975. Their conclusion was that despite interest on the part of villagers to improve their situation, there was a number of structural obstacles that frustrated the genuine improvement of the water supply. Etaix and Lenglet (1977) report that of 22 actions reported in the first 1977 survey in January, they could find evidence for not one to have actually been carried out when they probed these actions in the subsequent April survey. There are a number of explanations for this discrepancy between knowing and acting. First, certain subjects are of much greater interest to peasants, usually matters concerning economic gain for the family (employment, agriculture, etc.) or things recognized as serious problems (clean water). Also, there is the problem of resources. Most suggested actions require cash or, another scarce resource, time, and peasants often cannot afford to undertake such actions. A third area is the help of a field expert to implement the action. Though some villages do have technical agents available, their presence is limited.

These obstacles to action will form part of the question five below and the recommendations in Chapter Four.

3. Adequacy: What practical difference does TPT make?

A project may create an effect but in such a limited way that it cannot reach the intended population. Thus, literacy projects by and large have not made much of a numerical dent on the illiterate populations of the Third World despite giant efforts (Oxenham, 1975).* Adequacy is a logical combination of the first two categories of effort and effect and asks what effect there has been on how many people and how this compares with the magnitude of the problem.

The evidence from the first two sections suggests that, as it now operates, OSTV is not adequately meeting its defined goals for the target population it has in mind. In section one, it was suggested that the TPT audience is declining; in section two that only the first goal of awareness was being substantially achieved and that goals of understanding and action were only being attained in a very limited sense. The reasons for these problems cannot be spelled out in detail in the present document but a review of them can be found in many of the previous Evaluation Unit's documents (cf. special bibliography, Appendix B). A few reasons may be cited here and will be discussed somewhat more in section five on process and taken up as part of the recommendations in Chapter Four.

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*Oxenham, J. Non-formal education approaches to teaching literacy. East Lansing: Michigan State University Institute of International Studies in Education, MSU series in NFE, Supplementary paper No. 2, 1975.

Regarding audience reach there are a number of factors limiting greater participation, among those most frequently mentioned: animators do not open schools on TPT nights because they are not paid and not motivated to work at animation; relations of the teacher-animator with villagers are inadequate; animation sessions are poorly done; topics are of varying interest to audiences; village leaders do not give sufficient backing to TPT; there is no promotion of TPT by OSTV through other means like radio; and the basic pedagogy underlying TPT is inadequate. The limitation of impact, especially of action, relates to a series of limitations both internal and external to the project, among the more obvious: there is a lack of collaboration between TPT and appropriate local development agents in different series; village decision-makers may not come to TPT sessions; many TPT programs are not geared to action; financial and administrative constraints severely limit what actions are possible.

One aspect that must be considered is what effects other than those stated in the goals of OSTV may be achieved and achieved quite adequately. Ivorian decision-makers will probably wish to consider these "unintended" outcomes in deciding on the future of OSTV. The growth of mass media use is an almost universal phenomenon and it grows in relatively predictable fashion, often going from increased use of radio, to increased film attendance, to more TV exposure, to greater use of printed materials like newspapers. The conclusions of Etaix and Lenglet (1977) about a declining TPT audience do not suggest that if TV sets were open for viewing, they would not be used. Seya and Yao (1977) show that there is considerable interest and use in

the various modern media and one can suggest that as access to different media increases time devoted to those media will also increase. As TV expands to all primary schools in rural Ivory Coast and private set ownership increases, there is little doubt that television viewing will increase among village people. In fact, the Ivory Coast will be one of the first Third World Countries to have promoted widespread access to television for significant proportions of its rural population. Thus one can assume a growing rural audience for TV in the future. One can also assume some kind of effects as a consequence, but of what kind? The answer will partly depend on how the government chooses to use its television medium in support of meaningful rural development activities.

4. Efficiency: What are the costs in comparison with alternatives?

The evaluation question about efficiency concentrates on the costs of OSTV in comparison with the results reported in the first three sections of this chapter. This in turn suggests three sets of questions of differing degrees of difficulty to answer: (a) questions about how costs, both total and unit costs, might be reduced; (b) questions about how to make OSTV a more efficient and cost-effective organization; (c) questions about the benefit-cost ratio of OSTV and alternative ways of using the resources spent on it. The cost data are relatively scarce and thus this set of questions is difficult to answer. But what costs are available along with their analysis will be based on Klees' (1977) report summarized in Chapter Three.

Klees conducted his costing exercise under two different assumptions, one including actual government expenditure per program hour, the other including all costs whether actually paid for by some institution or not. These costs are high in comparison with other similar projects and the author goes on to point out some areas where changes in current practice might reduce average costs. Areas where a small investment may increase productivity of OSTV are: repeating broadcasts, better training for animators, more support materials and evaluation. Producing more programs and increasing audience size (and number of animators) are more costly propositions according to Klees and do not respond as much to economies of scale. Some suggestions for increasing audience size and lowering unit costs of OSTV will be made in Chapter Four.

The second set of questions concerns not just costs but effectiveness and efficiency of OSTV. The effectiveness of OSTV has been discussed in previous sections but neither these data nor those on costs are sufficient for carrying out a cost-effectiveness study at this time. Klees discusses how to increase the relative efficiency, i.e. the number of persons served by the system for a minimum of costs and more will be said about this below.

Concerning any kind of quantitative benefit-cost ratio for OSTV, there are a set of complicating factors related both to the relatively poor quality of cost and benefit data available and to general awareness objective of most TPT programs which do not allow any precise outcomes that can be translated into meaningful prices (as Klees points out). What may be worth consideration both

for the sake of efficiency and of effectiveness is whether OSTV might merge some of its rural development work with the efforts of other agencies that are using mass media to reach rural people (like ONPR, the Ministry of Information's National Cup of Progress, or the Ministry of Agriculture's farmers' programs), and keep for the Ministry of Primary and TV Education more specific training work, like literacy or post-primary education.

Finally, the double-edged question of efficiency looks both at reducing the costs of OSTV and at increasing the numbers of persons served within a comparative framework of alternative ways of achieving the same goals. Since no other group is doing precisely the same thing as OSTV, it is easy to dismiss comparisons, but since several agencies are doing at least similar things as was mentioned above (ONPR, Information, Agriculture), one cannot ignore alternatives completely. For a real answer to the question, information about the cost-effectiveness of such alternatives would have to be compared with that of OSTV.

5. Process: How and Why does the program work or fail to work?

This question touches on an area that is of interest to both researchers and project managers, i.e. those constraints or problems within the project itself or in the environment that help or hinder the achievement of objectives. Since most projects are not evaluated if they are successful, the focus of much process evaluation is often on problems or failures. And this emphasis often causes project managers to see evaluation as primarily negative and fault finding.

Reviewing the main documents of the Evaluation Unit on how OSTV has functioned and the impact it has had finds a greater focus on the problems that OSTV has encountered and these, no doubt, have tended to minimize the effects that TPT programs have had.

It would be too long and of little use simply to list all of the "Problems" that the research has produced. Most of these are already known to OSTV managers and many are outside the present scope of their power to change. Nevertheless, for international audiences a brief, coherent review of these constraints would provide a notion of some of the factors that may affect similar projects that may be tried in other places. This review, in addition, would prepare for the recommendations that follow in Chapter Four which have been developed with the present project and Ivoiran decision-makers in mind.

The framework adopted in this section is to organize the constraints under five headings that go from the more general to the more particular or from the planning and policy stages to the action stages in the village. The categories are: political priority, administration, message construction, reception and follow-up. Under each of these points the research findings concerning constraints will be cited and related, as much as possible, to one of the goals of OSTV.

Political priority: There is no doubt that the Ivory Coast is placing high priority on education. Recently, the President of the National Assembly announced that the country was devoting more than 30% of its entire national budget to education.* This is one of the

*Fraternité Hebdo, 19 August 1977: p. 2.

highest rates of expenditure on education in the world. However, what is also clear from the history of the development of the OSTV service (cf. Grant, 1977) is that adult education has not had the priority that it deserves. Other African countries like Tanzania have given much more attention to a careful planning and significant investment for adult education (Lenglet and McAnany, 1977, discuss four approaches to rural adult education in Ivory Coast, Tanzania, Dominican Republic and Guatemala).

From this relative lack of priority given to adult education, and OSTV in particular, there follow four consequences cited by researchers over the last four years. First, as Grant (1977) points out, OSTV leadership faced a difficult task of convincing a public that TPT was also education even though it was not something connected with classrooms and diplomas. A second aspect of the problem is the slow evolution of OSTV toward a viable institution that can survive the budget cuts that periodically eliminate innovative programs and often leave more stagnant institutions untouched simply because they have been around longer. Another direct consequence of this lack of a clear and firm mandate in adult education is chronic funding problems and a survival technique from year to year (Klees, 1977). Finally, OSTV and adult education have not had the personnel to set down a careful plan nor work out a coherent pedagogical approach, nor a philosophy of adult education (Benveniste, 1976).

The consequences of this situation will be seen on the various operational levels of OSTV to be outlined below.

Administration: Grant (1977) has reviewed a number of the administrative consequences of the above problems and others in his administrative history. Klees (1977) has touched upon the relatively high costs of program production and the often inefficient way in which equipment must be borrowed from other institutions. What both Grant and Klees have highlighted is that in order to finance their program production (40 half hour programs in 1976-77), OSTV has had to become a kind of production center for other agencies who share financing. The consequences of this are multiple. It is difficult to work out a coherent plan for adult education if one is serving the purposes of many other agencies with their own objectives. Financing is always uncertain because one does not know whether other agencies will continue their support from year to year. Finally, interagency cooperation though existing at the national level to a certain degree is not reflected at all in the work of the field agents of the different institutions collaborating with TPT animateurs (Benveniste, 1976; Grant and Seya, 1976; Grant, 1977; Lenglet, 1976; Etaix and Lenglet, 1977).

At another level, the lack of a clear mandate and more coherent planning has allowed a number of other agencies to overlap with OSTV in its television series. The Ministry of Information's National Cup of Progress on radio and TV, the ONPR's TV production "Promovillage" and the Ministry of Agriculture's "Magazine Rural" program for farmers, all tend to compete with one another and with TPT. Far from attempting to work out a better division of labor and a mutual reinforcement of one another's work, the collaboration among

these agencies seems to have deteriorated over the last few years (Grant, 1977).

One consequence of these administrative arrangements is that, as Etaix and Lenglet (1977) point out, TPT has concentrated its attention and achieved better the awareness objective (sensibilisation) while neglecting learning and action objectives. Since the Ministry of Information also shares this objective of informing the public, OSTV has more difficulty in specifying its educational image and justifying its administrative location in the Ministry of Primary and Television Education. In fact, this latter ministry may have to change somehow if television moves up in secondary or even higher education at some future time.

Message construction: The area of message construction has not been researched sufficiently in OSTV. In 1974-75 and 1975-76 there were a number of brief studies of the OSTV research unit to find out if programs were being understood (Bisiliat, Cambra, Zéba, 1975; Bisiliat, Jouët, Lenglet and Zéba, 1975 a and 1975b). Such research is based on an important assumption that one of the critical factors in a successful media project is in the quality of the message. If the message is poorly done, then no matter what other kinds of support the system has, people will not pay attention to or be able to learn from it.

Some of the observations that researchers have made about problems with the development of programs concern pedagogical appropriateness, style, language, order and organization of series, the content or topics treated and formative evaluation. Bisiliat and

others (1975a, 1975b) and Jouët (1976) were concerned about the pedagogical appropriateness of messages that were to be received by illiterate persons (both in print and visual materials) who come from a variety of ethnic backgrounds. The point that these researchers were making is a consequence of one of the points made above. Without a real mandate and careful planning, there is neither time nor personnel to work out a pedagogy appropriate for the illiterate adult of the Ivorien village. Benveniste (1976), Grant (1974), and Yao (1976) have made the same observation in the field: rural illiterate people must be taught at their level if the message is to have genuine educational impact. The question of style, whether a didactic or a dramatic approach is better is often in dispute among educators and producers. Feedback from urban and rural audiences does not clarify the issue and ultimately it is a judgment to be made in relation to the content of the message. Etaix and Lenglet (1977) have pointed out that people tended to remember TPT programs of particular relevance to them or those that appealed to their interest in the dramatic story like the series on credit and savings and Sikatio. The problem is in choosing the right style for the right topic.

Grant (1977) refers to the language problem as an important constraint but there is no simple solution. If the programming were in a local language then groups speaking that language would undoubtedly be more interested (cf. Seya and Yao, 1977 for evidence on audience interest in local language broadcasting), but this is very difficult for the Ivory Coast with its great language diversity and only radio now gives any significant time to different local language groups.

Broadcasting in French, however, means that the appeal will probably be to the better educated (Fritz, 1976; Longlet, 1976; Seya and Yao, 1977; and Etaix and Longlet, 1977) thus creating a bias toward the already better-off.

The problem of order and organization returns to the problem of pedagogy and the institutional dependency of OSTV. It seems better pedagogically to treat a single longer series on one topic as Longlet (1976) points out in his water series study. The short series that is broken up by several weeks of other kinds of programming (e.g. the series on animal raising in 1976-77, cf. 1976-77 broadcast schedule, Table 3) does not promote learning nor a continued interest on the part of the audience. The way topics are chosen and the length of their treatment stems in part from the way other agencies finance part of TPT production. If OSTV had an independent budget, it might better plan longer and more coherent series.

A final word should be given to the problems of formative evaluation as they touch on pretesting of materials or learning the reactions of the audience to actual broadcasts. The pretesting attempted by Bisilliat et al. (1975) did not work well and now practically no pretesting of any kind is done; the work of Fritz (1976) is much slowed down also. This may mean that TPT has become less an educational enterprise where comprehension and learning are paramount and audience reaction is carefully monitored and more of a dramatic or public information TV series that must please a large prime-time audience. As a consequence of this falling off of formative evaluation, OSTV has less information of an immediately useful kind that has some

scientific base than it did before. This also means that message quality must be judged largely on the basis of subjective opinions of the producers or their professional colleagues.

Reception: OSTV has heavily concentrated its attention on organizing its audience. The constraints in this respect are considerable as will be seen, but the consequences of having a well organized audience may mean much greater learning achievement and, with the right audience, a better chance of common decisions and action. The problems associated with reception concern the animation process and audience selection.

Benveniste (1976) devoted her four village study to the animation process, but Fritz (1976), Lenglet (1976), Grant and Seya (1976) and Yao (1976) have also reported on this vital link in the causal chain from message to impact. There is unanimity among the researchers that the primary school teacher is not the best person to be a village animator. Some of the reasons are his generally weak social relations with villagers, his ignorance about many of the development problems treated on TPT, his lack of training in animation with rural adults and, above all, his general lack of motivation to do the animation or even to open the classroom on TPT nights because he is not paid extra for his work. The consequences of these problems are serious for the proper functioning of TPT. First and most serious is that many schools are not even open (Fritz, 1976, estimates that perhaps only about one third of the schools are open on any given TPT night and some current subjective estimates are even lower). Secondly, the animator is indifferent and does not work at gaining an audience,

and so adult audiences have declined. Third, even when people come, they do not have a real animation but more like a primary school class. The animator is not likely to have contact with village development agents so that he does not usually invite them to participate in appropriate TPT series. Finally, the animator is a primary teacher with no special knowledge about the many topics on agriculture, health, rural cooperatives or water that are of concern to rural villagers. This area of the animation problem is one where there is a large degree of consensus by evaluation staff. This does not mean that there are easy solutions although some possibilities will be suggested in chapter Four.

The problem of audience selection and participation was treated above under the effort question (section 1) and under effect (section 2). The constraints or problems are several: the declining number of participants, the skewed audience profile, irregularity of viewing and the lack of decision-making power of the viewing group. Lenglet (1976), Fritz (1976), Grant and Seya (1976), and Etaix and Lenglet (1977) have all made observations concerning these problems. Etaix and Lenglet (1977) observe a declining number of people participating in TPT over time. Without a rural audience most TPT objectives could simply not be achieved so a solution to that problem is primordial. The audience profile suggested by Etaix and Lenglet and corroborated by others is one in which the young, even sometimes children, predominate and those with better education and perhaps greater wealth. The constraint is not only on how many but who are reached and whether the topics are most appropriate for them.

The problem of regularity of viewing is not clearly decided. Etaix and Lenglet (1977) vacilate on the question but conclude that there is no regular core viewing group. If this is so, then it is difficult to see how many of the learning and action objectives can be achieved since they depend on an understanding and a group effort that can come only from some kind of longer term organization. This suggests a final problem concerning the group that Benveniste (1976) and others have discussed: the group of predominantly younger people in which few village leaders participate (Fritz, 1977; Lenglet, 1976; and Grant and Seya, 1976) does not correspond with the decision structure in the villages and so actions are less likely to follow because TPT groups often cannot take communal decisions of any consequence.

Follow-up Action: The real impact of TPT on rural life is in the action areas. It is here that the greatest problems exist and change is most difficult to promote. The constraints or problems have been emphasized for many years concerning follow-up action from the experimental stage (Grant, 1974) until the present (Etaix and Lenglet, 1977). One could summarize the large constraints under five categories: structural, administrative, financial, political and cultural. Briefly the structural constraints are all too familiar but can be illustrated for the reader. A series on cooperatives urging common effort to grow cash crops assumes roads to transport the crop, a market system to absorb the crop, and sufficient land to grow it as well as the availabity of credit for inputs like seed and fertilizer. In many places these are constraints that prevent any such action.

Administrative constraints are reported by Lenglet's case study (1976) of follow-up actions on the water series. Local or prefect bureaucrats did not or could not provide well-digging equipment when villages wanted them. At other times money collected by the village for water projects seems to have been taken by bureaucrats. The other major administrative problem is inter-agency cooperation between TPT and development agents in the village. Etaix and Lenglet (1977) report that in one series on livestock raising in 1976-77, the livestock field agents were not even told their agency was sponsoring such a TPT series. Naturally they gave no collaboration to animators.

The financial constraint has been repeated often: peasants have little spare cash for any suggested actions. The political constraint returns us to the lack of priority OSTV has at the highest political level. The same is true at the local level where village chiefs rarely come to TPT sessions and do not particularly encourage others to participate (Benveniste, 1976; and Grant and Seya, 1976). The cultural constraints concern the chasm between the tradit nal and the modern world. Many health practices, for example, may conflict with established ways of acting so that peasants may consider boiling water to be necessary for city folk but not for themselves.

Many of the constraints mentioned above are not directly under the control of OSTV managers but many, on the other hand, are. The review of these constraints has been somewhat more detailed because it is hoped that some solutions to specific problems may be suggested in Chapter Four.

Conclusion

This chapter on the social impact of OSTV within the evaluation framework outlined in the introduction cannot reflect the whole picture of what the Ivory Coast's out-of-school television has done. Neither can the Suchman model of five categories of summative evaluation be applied to the totatlity of OSTV research which was carried out under this contract. For instance, one might add the category of relevance, that is the "fit" between content of OSTV programs and spectator needs. Grant (1978) reviews the studies carried out both within the ETV program (Out-of-School Department and Evaluation Service) and outside (Ethno-Sociology Institute and the World Bank) which have addressed rural needs in the Ivory Coast and makes recommendations to assure that in the future high-level urban officials do not offer the sole input into the decision of what subject matter is covered by OSTV programs.

On the basis of the evidence gathered by the Research Unit of OSTV and by the Evaluation Service, this chapter has tried to respond to the five questions posed on effort, effect, adequacy, efficiency, and process. Summarizing briefly, one can say that the effort expended by OSTV over four years was impressive. From five experimental programs in 1973, OSTV completed 40 in 1976-77. It reached a sizeable but apparently declining audience (at least of an organized kind) in rural areas and an estimated (IIOP, 1975) urban audience of up to perhaps 1,000,000. The kind of rural audience it reached, however, did not correspond totally with its target audience. Its effects were most clearly achieved in awareness (sensibilisation)but much

less in learning and attitude change and practically not at all in behavior change. The adequacy of its achievements must be seen in the light of its goals which are broad and aspire to affect important rural problems like agricultural productivity, health care and the rural exodus. These achievements are not adequate in any sense of solving these problems and are less effective than they could be if certain constraints ennumerated in section four could be at least partly overcome. Finally, costs of OSTV have been high and so cost reductions must be achieved. A more efficient use of resources could also be achieved through an increased participation of the rural audience, less competition and more coordination among agencies oriented towards rural development, etc. How some of these objectives could better be achieved will be the burden of Chapter Four on recommendations.

CHAPTER THREE

ECONOMIC STUDIES

Given the increasing emphasis that seems to be influencing public sector decision-making in many nations toward a more specific inclusion of economic criteria in their decision analyses processes, it is not surprising that a relatively large proportion of effort in this research was devoted to such economic investigation. As agreed upon with the Ivorian government, these economic evaluation studies were to include more components of that nation's use of ETV than the out-of-school ETV system; in particular, aspects of the economics of their formal ETV system and its implications for secondary school policies were to be analyzed as well. Most of the economic studies were to focus on the cost aspects of the economist's cost-benefit criterion for social decision-making (see Klees and Wells, 1977, for a general discussion of the application of cost-effectiveness and cost-benefit analysis to educational evaluation with a specific focus on educational technology alternatives) although this is not true for the secondary schooling issues examined. In this chapter we will discuss the seven specific studies undertaken in the context of the three educational levels or audiences to which they were applied: primary schooling, secondary schooling, and out-of-school education.

1. The Costs of the Primary School ETV Reform

The economic studies undertaken to evaluate several aspects of the primary school ETV reform focused entirely on costs for two primary reasons. First, the evaluation of the pedagogical effectiveness of

primary schooling was undertaken by the Ivory Coast with technical assistance from the Belgium government. Their timetable, their focus for evaluation, and the difficulties of multi-national coordination prevented any integrated cost-effectiveness analysis. Second, the fact that the first graduates from the primary school ETV system did not appear until 1977 prevented any initial examination of the economic benefit component of the evaluation. Three cost analyses were undertaken over the contract period relevant to the Ivorian primary school ETV system and in this section we will discuss each in turn.

The first study by Klees and Jamison (1976) was an extensive analysis of the formal schooling ETV cost data that the authors had gathered three years earlier under the previous AED/AID evaluation contract (summarized in Klees and Jamison, 1973). The original 1973 study resulted in the first compilation of all those costs associated with ETV components of the operational Ivorian primary school reform (that is, the costs of classroom facilities and teachers were not included). Basically, Klees and Jamison (1973) examined the historical costs of the administration, production, transmission, reception, and printed support materials components of the ETV system over the five years since project expenditures began, and projected future costs twenty years after broadcasting had begun (to 1991). The study examined the behavior of average costs per student and the original costs of system expansion as well as total system costs. In addition, two policy decisions that Ivorian decision-makers were considering were discussed in terms of their cost impact: whether or not to construct a new ETV Production Complex, and whether to use one TV receiver for every one classroom or for every two classrooms.

In their re-analysis of these cost data, Klees and Jamison (1976) eliminated the consideration of the two policy alternatives above, since by 1976 decisions had been made both to build the new ETV Complex in Bouaké and to use one TV per classroom. What they did do was to extend the analysis to enable the Ivorian system to be compared with the costs of other international ETV projects (see also Jamison, Klees and Wells, 1976). In part this involved approximating the cost behavior of the Ivorian ETV system in terms of the functional relationship between costs and two key system policy variables: the number of hours of ETV programs which were broadcast and the number of students enrolled in the system. Moreover, they compared the results of this cost analysis to those of a cost study undertaken during the planning stage of Ivorian ETV project (see Chau, 1972) and also looked at certain aspects of system financing. Below we briefly examine the results of each of these components of their report.*

In their analysis of year-by-year ETV system costs, Klees and Jamison report expenditures of about 2 billion F CFA in 1973, with projections indicating rapid expansion to about 2.5 billion F CFA by 1977 when all six primary grades were to be included, and then gradually growing to about 3.75 billion F CFA by 1991. In terms of where this money is coming from, Klees and Jamison's analysis of system financing indicated that the Ivorian government paid for about 42 percent of

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* All costs in Klees and Jamison (1976) were reported in 1972 U.S. dollars in order to achieve comparability with other studies; given that the other economic studies reported costs in F CFA we will convert the 1972 U.S. dollar figures reported to 1972 F CFA (assuming 246.9 F CFA = 1 U.S. dollar, as used by Klees and Jamison, 1976, p. 1). All projected costs are thus in real 1972 F CFA, assuming usually that wage and price increases match the economy's rate of inflation.

total ETV component costs in 1973 and projected, in accord with Ivorian and foreign policy agreements, that this percentage share would rise steadily until by 1981 all costs would be borne by the Ivory Coast.

In terms of unit costs, Klees and Jamison calculate the average annual cost per student of the ETV components over the entire 20 years projected ETV system life at about 4900 F CFA (using the AC_{ij} concept which presents values of both costs and enrollment over time, see Klees and Jamison, 1976, p. 37 ff.) Excluding the costs of printed support materials this figure reduces to about 3800 F CFA to supply the production, transmission, and reception components of the Ivorian ETV system. The way in which the annual total cost (TC) varies with decisions as to the number of hours of ETV programs broadcast (h) and the number of students enrolled (N) was depicted as follows:

$$TC = 673{,}640{,}000 + 557{,}000\ h + 2{,}150\ N$$

It is difficult to judge the reasonableness of such costs in the absence of information as to their effects and benefits. Some insights may be obtained through international comparisons, however, despite the comparability difficulties with which they are fraught. Klees and Jamison compare the results of their analysis above with costs of four other ETV projects directed toward primary and/or secondary schooling. Their Table 13 is reproduced below as Table 6. Three different unit cost measures are presented for each of the projects: AC_n, the average cost per student for the one year of the project for which information is given for N and h (for the Ivory Coast this was planned for operation in 1980); AC_{1j}, the average cost over the whole 20 year lifetime projected for each alternative (which is perhaps a better summary measure

TABLE 6

Cost Summary of Five Educational Television Projects[a]
(in 1972 F CFA)

Project	Year of Information Source	TC[f]	N	h	F	V_N	V_h	AC_N	$AC^e_{i,j}$	Cost per Student Hour
Ivory Coast[b]	1973									
(a) Total Costs		2,735	654,400	1,158	673,570,000	2,165	556,500	4,180	4,940	21
(b) Without printed materials		2,055	654,400	1,158	418,710,000	1,515	556,500	3,140	3,835	16
El Salvador[c]	1972									
(a) Sec. only		288	48,000	540	275,550,000	170	--	6,010	3,695	35
(b) Elem. & Sec.		703	990,000	1,530	474,070,000	230	--	710	2,470	4
Hagerstown	1973	295	22,000	1,440	57,900,000	220	161,000	13,390	13,185	115
Korea[d]	1975	795	1,000,000	560	52,840,000	445	525,425	795	--	11
Mexico	1972	174	29,000	1,000	0	1,045	132,840	5,990	245	17

Notes to Table 6

[a]Values in this table were computed with a social rate of discount of 7.5%. The symbols are defined as follows: N = Number of students using project (in the given year, unless otherwise noted); h = the number of hours of programming broadcast per year; F = annualized fixed costs; V_N = annualized variable cost per student; V_h = annualized variable cost per hour broadcast; AC_N = average annual cost per student for the given values of N and h; $AC_{1,j}$ = the average annual cost per student from year 1 to year j, where j is that year in which the project has been broadcasting to students for 20 years -- for the Ivory Coast and El Salvador we report $AC_{1,23}$, for Hagerstown $AC_{1,20}$, and for Mexico $AC_{1,21}$; and the student hour cost is the annual cost per student hour is the annual cost per student hour of viewing for the given values of N and h. This table was drawn from Jamison, Klees, and Wells (1976, Table III.2) and Jamison and Klees (1975, Table IV).

[b]The N and h for the Ivory Coast reflect projected ITV system utilization for the year 1980.

[c]The cost function for instructional television in El Salvador was derived solely as a function of V_N; therefore V_h is not given in the table (costs that are variable per hour broadcast are thus included in the project's fixed cost figure). El Salvador (b) refers to projections that include the extension of ITV coverage from secondary schooling to primary, and N and h reflect such usage as projected for the year 1980.

[d]The N and h for Korea reflect planned utilization of the system as discussed in Jamison, Klees, and Wells (1976, Chapter X).

[e]The data for this column are taken from the case studies presented in Jamison, Klees, and Wells (1976, Part three). Sufficient data were not available to allow calculations of AC_{ij}'s for the Korean instructional television project.

[f]TC = total project costs and are given in millions of F CFA.

Source: Klees and Jamison (1976).

than AC_N); and the cost per student-hour, which is again based on one year of project operations, but averages costs of both students enrolled and the number of hours produced. All three summary measures indicate that unit costs for the Ivorian project fall within the range reported for other systems. Nonetheless the Ivorian ETV system is likely one of the most costly of its kind in the world as can be seen from looking at the total cost reported (see the TC column) and from closer inspection of other columns on Table 6. In particular the fixed costs (F), the costs that vary with enrollment (V_N), and the costs that vary with hours broadcast (V_h) of the Ivorian ETV system are higher than those reported for any of the other projects. The reason Ivorian average costs are relatively low is due to its relatively large projected enrollments. Perhaps the closest comparison in terms of structure and scope is with the El Salvador ETV system (projected to include primary student enrollments, labeled El Salvador (b) on Table 6). Even if the Ivorian costs were calculated at the higher projected enrollments of the Salvadoran system (990,000 students), the Ivorian system would cost over three times that of El Salvador in terms of average costs per student and student-hour, as well as total cost. Klees and Jamison report that part of such relatively high costs are due to high program production costs (which we will examine below), but of considerably more importance are the high costs of reception system power (batteries are an expensive way to power a television, about 35 times more expensive than mainline current in this case) and maintenance. Both of these latter conditions are in large part consequences of the present state of economic development in the Ivory Coast, reflected in the lack of electrical power in most villages and the lack of easy access to most villages.

A final point of interest examined by Klees and Jamison is the magnitude of the difference between planned and operational costs. It is unusual to find reported detailed cost analyses undertaken prior to the initiation of an educational technology system; the Ivory Coast system, however, is an exception in that Ivorian and French educational planners paid careful attention to developing estimates of future costs during the project planning stage. Cost projections made by Dr. Chau of UNESCO's International Institute of Educational Planning (reported in Chau, 1972) were compared with those based on Klees and Jamison's analysis after three years of actual system operations. Klees and Jamison's calculations yield cost figures about 70 percent higher than those estimated by the planning study. This is not meant as a criticism of Dr. Chau and his associates, but serves to underscore the many potential sources of error in cost analysis, especially in the project planning stage, that often yield underestimates (see Carnoy and Levin, 1975 for an interesting discussion of why this may be so).

Following the re-analysis of Klees and Jamison's 1973 cost data described above, another study of primary school ETV system costs was undertaken through this contract which is reported in Eicher and Orivel (1977). In part the purpose of this study was to provide a more up-to-date cost analysis of ETV system components, given the four more years of project operations. Moreover, Klees and Jamison looked only at the television technology components of the primary school reform, while the Eicher/Orivel study was commissioned to look at all aspects of the reform, thus including additionally the costs of teachers and teacher training. Below we examine some of the more salient results of this analysis.

First, remarkably enough, the costs of the ETV components of the system (including printed support materials) reported by Eicher and Orivel were rather close, in total, to those given by Klees and Jamison. For example, in 1977 the former report total costs of 2.7 billion F CFA, while the latter report total costs of about 2.4 billion F CFA. For 1990 the respective figures are 3.7 and 3.4 billion F CFA. Moreover since the former were calculated in constant 1975 F CFA and the latter in constant 1972 F CFA, the figures are even closer than they appear. Nevertheless such proximity of results, as Eicher and Orivel argue, are most likely due to chance since the assumptions under which the two studies were made were quite different. In particular, the Eicher and Orivel study reflected the following new assumptions:

a) Student enrollment projections made by the Ivory Coast forecast an additional 300,000 student covered, bringing the total by 1990 to almost 1.5 million students;

b) A substantial salary increase, averaging about 40 percent, was given to all government employees designated as teachers, which included many of the Ivorians working on the ETV project outside of the classroom teachers;

c) By 1980 solar batteries would be widely used and at a small fraction of present battery costs, replacing the expensive alkaline batteries currently used to power TV receivers; and

d) To offset the increasing costs of paper and printing, the present use of student workbooks with a one-year life would be replaced by books that could be re-used, and thus have a two-year life.

The first two assumptions would naturally lead to cost estimates higher than those projected by Klees and Jamison, while the second two would lead to lower estimates. It is thus likely that the similarity of average and total costs remarked upon above reflects the accidental

balancing of these new and different assumptions. Most importantly we should emphasize that (c) and (d) are still assumptions, and to the extent that they may not occur, actual Ivorian ETV system component costs would be substantially higher than Eicher and Orivel forecast. If solar batteries are not workable or economical, the continued use of alkaline batteries, according to Eicher and Orivel (1977, p. 30), would result in a doubling of total annual ETV components costs by 1990, from the 3.7 billion F CFA reported above (in 1975 F CFA) to about 7.5 billion F CFA. The continued use of workbooks would likely increase 1990 total annual costs by almost an additional one billion F CFA.*

Earlier we commented on the difficulties of judging the reasonableness of Ivorian ETV costs and offered international comparisons as one partial means to do so. Another means of assessing this (in the absence of effectiveness and benefit measures) is to examine ETV component costs in the context of total primary school costs. Perhaps the most important aspect of the Eicher and Orivel analysis is to focus attention on the cost complications of the teacher hiring, salary, and training policy changes that have accompanied the introduction of ETV into the Ivorian primary school system. In particular we have already mentioned the substantial increase in teacher (and school administrator) salaries. Moreover, the training time of teachers has been lengthened and the common use of minimally trained teachers is being eliminated. Taken together these policy changes yield cost increases that make the costs

*It should be noted that both the Klees/Jamison and Eicher/Orivel projections rest on the planned discontinuance of foreign aid after 1980. If foreign aid is estimated then total system costs will likely be significantly higher, although the costs to the Ivorian government may be lowered.

of ETV aspects of the system seem rather low. The costs of ETV components of the system in 1975 were about 20 percent of total primary school system costs, excluding classroom costs, in 1977 about 10 percent, and by 1990 only 3 percent. Including the costs of classrooms would obviously reduce the relative share of ETV operations. The recent teacher salary increase above yields annual additional costs that by 1990 will equal about 15 times that spent on all ETV system components.

Eicher and Orivel (1977, p. 69 ff.) go on to provide a picture of the larger context within which ETV system expenditures must be evaluated. In 1975 the total amount spent by the public sector on Ivorian education (of which about one quarter went for primary schooling), was about 40 percent of total government expenditures, and about 9 percent of Ivorian Gross National Product. As Eicher and Orivel point out such effort devoted towards education is rarely matched in other countries, even the most industrialized ones. Moreover this high figure was in effect prior to the cost impact of the primary school reform and the subsequent teacher salary increase. Over the 15-year period from 1975 to 1990 Eicher and Orivel project that total annual primary school system costs will increase eightfold. If access rates to higher educational levels are maintained, their costs will also increase substantially. Assuming costs for the first cycle of secondary schooling also increase eightfold and other level costs increase fourfold over 1975-1990, Eicher and Orivel calculate that total educational expenditures over this period will increase sixfold. Assuming that GNP doubles over these 15 years (a 4.75% annual rate of real growth), by 1990 the Ivory Coast will be spending 20 percent of it on education. Even if GNP

triples (a 7.6% annual rate of real growth), the share of education would come to about 15%. Eicher and Orivel emphasize that the Ivorian government must seriously consider whether it can afford such an educational effort, which relative to other nations is exceptionally large. And again they point out that the cost impact of the educational television medium is quite miniscule.

The points made above should not be taken to mean that decision-makers should not be concerned with the costs of ETV. Simply because some decisions involve hundreds of billions of F CFA and others only a few billion does not mean that we should ignore the latter. The third study of the primary school ETV system undertaken through this research contract focussed on one particular system component: ETV program production. In order to examine the economic aspects of this production process, the expertise of an ETV program production specialist was combined with that of an economist, resulting in a rather unusual study which is reported in Evans and Klees (1976). Below we examine the main features of their analysis.

Evans and Klees focus on the general efficiency of the ETV program production process in terms of what physical and human resources are utilized, how much they cost, and how those resources are organized. The ETV Complex in Bouaké houses the ETV program and printed support materials production facilities and the teacher training facilities, employing about 565 people during the 1975-76 school year. About 85 percent of these individuals were working on ETV program production. ETV programs, usually about 10 minutes or less in length are produced for all subject areas. Ivorian plans for broadcast and production

output have been consistently more ambitious than achievements. While the broadcast target figure was lowered from planning stage estimates to 135 hours/grade/year, in 1974-75 only about 80 hours were broadcast to each grade. During the 1975-76 school year the goal was to produce 315 hours of programming, but only 201 hours were produced. Whether these discrepancies reflect insufficient resources devoted to the task or inefficiencies within the production process is difficult to assess. Planning documents indicated that 1975-76 program production capacity was 365 hours, which if true implies the system was operated at only 60 percent efficiency that year. Evans and Klees, after a detailed description of the organizational process by which programs (and printed support materials) are produced, discuss several issues which influence system efficiency.

A primary problem was seen to be a lack of sufficient organization and planning to ensure that even the most straightforward necessities of program production were accomplished, and a lack of consistent policies regarding the duties of the various types of skilled personnel. The frustrations inherent in such situations were clearly felt by Complex personnel. Critical to the solution of these organizational problems is improvement in the training of Ivorians to take over the management and operation of the ETV Complex, as is planned by 1980. Training to date for the Ivorians appears to have been inadequate -- with respect to both the number of Ivorians trained and the quality of that training. Part of the problem is the lack of any reasonable, applied basis for the selection of those Ivorians who are hired and then trained for skilled positions. The difficulties are heightened by the lack of job

promotion criteria, thus creating motivational problems, combined with a lack of sufficient monetary incentives to retain the best individuals. Of at least equal importance is the inadequacy of training of many of the French technical assistants and the lack of time available to give substantial on-the-job training to the Ivorians, especially given the heavily planned production schedule.

Despite these difficulties, programs do get finished, and, according to Evans and Klees, with greater care, sophistication, and diversity than is usually found in ETV productions. The costs of the resources employed in this ETV effort are clearly of interest to Ivorian decision-makers, as well as to many other countries. Evans and Klees estimate that the recurrent annual costs of system administration, personnel, and operations for the 1975-76 school year to be 637 million F CFA. Given a production of 201 hours of programming, this yields a short run marginal cost of producing an hour of ETV programming of 3.17 million F CFA. If highly paid foreign technical assistance were replaced by lower salaried Ivorian counterparts, as is planned for 1980, this cost would be reduced to 2.45 million F CFA. To this one must add the costs of facilities, equipment, and human capital investment, in the form of the expertise supplied by foreign technical assistants, in order to estimate the long run costs of the Ivorian ETV program production system. Evans and Klees estimate these total costs to average 4.40 million F CFA per hour of programming produced (in 1975 F CFA).

Again, it is difficult to judge the reasonableness of this level of expenditure without knowledge of the effects and benefits of such programming. Again, despite its shortcomings, an international comparison

can provide some insight; thus Evans and Klees' comparison (p. 42) is reproduced here as Table 7. The Ivorian ETV program production, in terms of average cost per hour produced, is the most expensive of those examined.* Facility costs are considerably more expensive in the Ivory Coast than elsewhere, reflecting the considerable cost of constructing a modern, new ETV Complex. The differences in recurrent costs are even more striking, probably reflecting the larger number of skilled personnel involved in the Ivorian system. Also included in the Ivorian average cost figure is the substantial human capital investment made by the French; if the Ivorians had been able to accomplish the same results without French personnel, average costs would have been reduced by about 815,000 F CFA.

Despite these relatively high costs, Evans and Klees point out that some ETV efforts, such as Sesame Street, have considerably higher costs (the costs of Sesame Street have been estimated at almost 10 million F CFA per hour produced), and that given the large Ivorian system student enrollments, Ivorian program production costs are relatively low on a per-student basis. Nonetheless, it is not clear to what extent more expenditures purchase more pedagogical or social benefits, and Klees and Evans caution that existing research (see Schramm, 1972) throws serious doubt on conventional ETV program production wisdom as to what constitutes "good" ETV programming. If some of the problems with the Ivorian ETV system mentioned above could be resolved, efficiency improvements could result in a consequent reduction in costs. Evans

*The reader will note that the costs in Table 6 are in 1972 F CFA, which account for the discrepancy between the Ivorian cost reported there and that reported previously.

TABLE 7

An International Comparison of ITV Program Production Costs[a]

	Number of Programming Hours[b]	Annualized Facility Costs[c] (in 1000s of 1972 F CFA)	Annualized Equipment Costs[d] (in 1000s F CFA)	Recurrent Costs (in 1000s of 1972 F CFA)	Average Cost per hour[e] (in 1000s F CFA)
Ivory Coast[f]	201	62,295	74,590	378,340	3,385
El Salvador	333	5,605	57,035	133,330	740
Hagerstown	1,440	9,910	51,825	209,255	190
Korea					420
Stanford	6,290	11,665	8,410	120,960	20
Telesecundaria	1,080	3,110	10,940	116,740	120
Open University	288				2,370

[a]This table is derived from Jamison, Klees, and Wells (1976, Table IV.2).

[b]This is the number of hours produced or revised in a year. It is not necessarily equal to the number of total hours broadcast to students.

[c]Facility costs are annualized at 7.5% with a 20-year life.

[d]Equipment costs are annualized at 7.5% with a 10-year life. Videotapes are included as equipment but assumed to have a 5-year life.

[e]These figures do not take account of differences in program life.

[f]The Ivory Coast data are drawn from that presented in Evans and Klees (1976).

and Klees estimate that if present personnel and facilities could produce 365 hours as theorized instead of the 201 hours actually produced (for the 1975-76 school year), then average costs would be only 1.85 million F CFA instead of the 3.38 million F CFA reported in Table 6 (both in 1972 F CFA).

All three studies discussed above taken together yield a more detailed picture of the resources utilized and costs incurred by an ETV project than any available, and should be of interest to many nations who are looking more closely at ETV alternatives. Some tentative recommendations specific to Ivorian decision-makers will be discussed in Chapter IV. Now we turn to look at the economic implications of the Ivorian primary school reform for secondary education.

2. The Economic Impact on the Secondary School System

During the initial planning stages for the primary school reform it was clearly recognized that the changes foreseen for primary education would have consequences for other components of the Ivorian educational system. Recently, since the first ETV system students have graduated, particular concern has been focussed on the implications for the secondary school system. A preliminary examination can be found in UNESCO (1973) and a more extensive discussion of some of the issues and the alternatives was undertaken by a special investigating committee, reported in the Ivory Coast (1975). The primary focus of discussion was the policies that should be adopted for secondary schooling given both the quantitative student expansion and qualitative curriculum changes that are occurring in primary schooling. Building on the previous works, three studies relevant to this problem were undertaken through this contract, and below we discuss the main points of each.

In a working document, McAnany (1976) explores some of the potential alternative technologies (used in the broadest sense of the word, as any alternative organization of the education process) available for secondary school expansion in the light of international project and research experience. There is a concern among Ivorian decision-makers that primary school students, accustomed to ETV programming, will need and benefit from the use of such technologies in secondary schooling and such alternatives are explicitly considered. Moreover, McAnany specifically looks at the costs of the various alternatives, not in monetary terms, but in terms of the actual physical and human resources required. Five specific alternatives are discussed for the regular secondary school system: extension of the traditional system; a traditional system supplemented by the introduction of locally controlled audio-visual media; an ETV-based system similar in scope and structure to that in primary school; an ETV-based system relying on less trained and lower-paid classroom teachers (similar to that used in Mexico; see Mayo, McAnany, and Klees, 1975); and a distance learning alternative through which students would use various media to pursue a regular secondary school education without a formal classroom structure. Additionally, McAnany discusses two alternatives for expansion of post-primary schooling alternatives that would not focus on the general academic curriculum of regular secondary schools: an ETV-based effort relying again on the Mexican model; and a system of shorter, more specific, training courses distributed through various media and classroom structures.

Of particular interest is the applicability to the Ivory Coast of the system used by Mexico for expansion of secondary schooling for rural

areas, which McAnany examines for both regular and terminal secondary school options. Despite the availabity of ETV capabilities in both countries, there are some important differences. Especially critical is the lack of a surplus of primary school teachers which Mexico had available to employ as low-cost secondary school classroom teachers. Moreover, there is likely to be greater opposition within the education establishment in the Ivory Coast than Mexico, especially if this option is used to replace regular secondary school teachers. This latter concern might be less significant if used in a terminal, post-primary structure.

In general, McAnany points out that the alternatives above are not mutually exclusive and that several may be combined to build a coherent set of schooling alternatives to follow primary education. He also emphasizes that decision-makers should pay specific attention to the equity considerations of the choices they face, as well as to efficiency considerations. He cautions that any of the non-traditional expansion options could create second-class degrees and avenues for a token treatment of the urban and rural poor.

In economist's terms, while McAnany (1976) examines the supply side of the secondary schooling picture, in terms of alternative technologies of production Wells (1977) in another working document looks at the demand side, in terms of the relationship of post-primary education to employment within the Ivorian economic structure. This latter consideration affects both the demand of individuals and the demand of firms for such schooling. Wells discusses each aspect in turn, restricting his analysis primarily to the industrial sector, which although only

employing 5 percent of the Ivorian work force, is usually seen as the destination of individuals with more than a primary school education.

First, the large increase in primary school enrollment that is occurring, the increase in secondary school applications, and the current concern with secondary school expansion all attest to the increasing social demand for secondary schooling of some kind. To date in the Ivory Coast such schooling levels have been restricted to a relatively privileged few, and their perceived potential as a route to status, income, and employment benefits is clearly a source of this general demand. Wells looks at average salary differences across educational levels and estimates the private monetary returns to individuals who forego income to attend such schooling and subsequently receive higher salaries. His results are as follows (where the rate of return indicated is compared to the previous educational level listed):

Level of Schooling	Private Rate of Return
Illiterate	-
Some Primary	23%
Primary Complete	-1%
Some Secondary	-1%
Secondary First Cycle Complete	38%
Secondary Complete	52%
University School	17%

Although primary completion and incomplete secondary schooling appears to yield a net income loss (the problems with the validity of such gross estimates should not be underestimated), as Wells discusses, the gains associated with first cycle secondary school completion and subsequent schooling is probably a driving force behind the increasing social demand for education.

In order to examine more specifically the relationship of such education to industrial employment, Wells analyzes the relationship between existing post-primary educational system enrollments, current employment categories and educational patterns, and projected employment needs. He points out the sharpness of the current educational pyramid which restricts educational opportunity. Looking at job classifications, Wells observes that only 15% of the 130,000 positions in the private industrial sector require education beyond the primary level. He also notes that for those 12,000 of these positions considered to be at the top of the occupational ladder (in status and income), almost 60 percent are held by non-Africans. Of central importance is his examination of the match between current projections of the supply of post-primary educated workers and the industrial demand for them. In general he finds that the demand for more educated workers will be fulfilled without such educational expansion, but significant shortages are forecast for two categories of relatively less skilled positions. If post-primary education is directed specifically towards training relevant to these projected shortages, Wells concludes, there is the potential for economic benefits.

Wells pays explicit attention to several shortcomings of the above analysis which should be mentioned. First, only a small portion of the Ivorian labor force is employed in the private industrial sector. To the extent that such educational expansion could benefit other sectors of the economy, in particular the agriculture sector which is the largest employer, very different policies would be called for. Second, to the extent wages are determined by administrative fiat, by class or special interest groups, that is through power as opposed to competitive forces,

these wages are no longer considered by economists to be measures of social value. In this case it is far from clear that education resulting in higher incomes for some is a good social investment, although clearly it may still be to the individual. Third, gross associations between educational and income levels are not necessarily indicative of causation, and thus Wells' private rate of return estimates may not be at all indicative of either past or future educational returns. Finally, despite their frequent use, labor power forecasts are generally inadequate predictors in practice, and from a theoretical perspective, are of doubtful validity as a basis for societal decision-making (see Blaug, 1970, for a good discussion). Nonetheless, social decisions will be made and the type of analysis that Wells undertakes provides useful information, clearly to be combined with judgments as to other benefits and costs of educational alternatives and to be interpreted in the light of such cautions.

In the final study done on the economics of secondary schooling, Daniere and Orivel (1977) integrated the works of McAnany and Wells described above into a detailed examination of an array of specific potential secondary school expansion alternatives. Furthermore, they supplement their analysis with a careful estimation of the monetary costs of each alternative. Daniere and Orivel begin by reviewing the type of evidence that Wells provided with respect to the social and industrial demand for secondary school education. In general, they observe that the evidence available indicates that the projected needs of the Ivorian economy do not justify a large scale expansion of traditional secondary schooling. Nonetheless, the increasing social demand

for education, the Ivorian government's stated commitment to compulsory schooling until age 15, the potential for other than monetary benefits of educational expansion, and the cautions and caveats expressed above about the reliability of Wells' labor power analysis, all provide potential rationales for considerably greater expansion than would result if only private sector industrial employment forecasts were the basis for the decision.

For traditional secondary schooling, Demiere and Orivel specify several quantitative alternatives for expansion, which can be summarized by the policy decision made with respect to two key variables: the rate of access of primary school graduates to the first year of secondary schooling, and the amount of repetitions allowed in the last grade of primary school, which permits rejected students to compete again for secondary school places. Three alternative access rates are posited: the maintenance of the current rate of 44 percent, a restriction of access to 30 percent admission, and a more expansionary policy of 50 percent admissions. Two repetitions policy alternatives are combined, both of which limit the number of CM2 pupils who, failing in their first secondary school entrance examination, are permitted to repeat. One policy is labeled "loose control," where 80 percent of first failures are allowed to repeat, and 50 percent of second failures. The second policy is called "tight control," where the corresponding percentages are 50 percent and 50 percent. Demiere and Orivel point out that, contrary to conventional wisdom, greater repetitions may not necessarily be inefficient; a selection process through which students are given more of an opportunity to demonstrate their potential than with a

one-time examination may better aid in choosing the more profitable students to educate. Moreover, a large initial access rate and repetition policy, using the secondary school system itself as a process by which to eliminate the less successful students, may better meet social demand expectations than a sharp initial cut-off.

Daniere and Orivel hypothesize the initiation of an alternative, complementary cycle to that of traditional secondary schooling, to satisfy social demands and government commitments. They consider two options: the first is a full three-year graded cycle, while the second is a more individualized non-graded, variable-length cycle. If the second option were to be chosen, Daniere and Orivel recommend that primary school graduates who wish to repeat a failed secondary school entrance examination be enrolled in it, and be given courses designed towards such ends instead of repeating CM2. The curriculum of these options is not really specified, but, given for the most part the terminal nature generally proposed for the complementary cycle, it should likely be oriented towards job-related skills. Ivorian decision-makers need to study the potential alternatives closely, with particular attention to the utility of education in the agricultural sector, which is the largest employer.

Based on McAnany's elaboration, Daniere and Orivel then go on to examine the possible alternative technologies available to deliver the chosen curricula to traditional and complementary cycle secondary schooling. Given the number of post-primary schooling system alternatives already engendered by the consideration of the various policy alternatives above, Daniere and Orivel chose to restrict their technology options to

fewer than those considered by McAnany. In particular, five technological options for regular first cycle secondary school are looked at in detail: an extension of the traditional system; the traditional system supplemented by substantial use of audio-visual media; a traditionally structured alternative which substitutes lower paid primary school teachers for the mostly French, existing secondary school teacher force, supplemented by intensive use of ETV; a community based system, similar to the previous alternative, but taking advantage of existing facilities and donated villager effort to reduce expenditures; and lastly, a distance learning system through which students use a variety of media to obtain a traditional education, without a formal classroom structure. Daniere and Orivel pay specific attention to the question of the suitability of the curriculum and delivery technology for the graduates of the new ETV based primary school curriculum, concluding that Ivorian planners are probably over-concerned with this aspect of the system, as it is likely that ETV students can adjust to and do well under any of the options postulated. A full-scale use of ETV in the secondary school in a manner similar to its use in primary school (with regularly qualified secondary school teachers) is briefly discussed, but not examined in any detail as its costs are considered prohibitive. For the complementary cycle, it is also possible to examine alternative delivery technologies, but for reasons of brevity and the necessity for more research, only one option is considered: the use of an ungraded variable-length complementary with many different curricula options, employing a variety of media combined with self-directed learning and one teacher for 150 students.

Given all the policy dimensions considered by Daniere and Orivel above there are almost a hundred possible alternative total system options. In their look at potential system costs, twelve of these alternatives were chosen for a more detailed examination. Table 8 (Daniere and Orivel, Table 68) briefly describes the most important parameters which define each option, and Table 9 (Daniere and Orivel, Table 21) summarizes the costs estimated for each option. In concluding, the authors favor the use of option 10 which expands the access rate to regular secondary schooling, has a liberal repetition policy, uses both traditional and ETV based technologies for such education (for different subgroups of the population covered), and has lower costs than most of the other options considered. Nonetheless, Daniere and Orivel explicitly realize that their study is only a preliminary foray, and that the most sensible choice of a total secondary school system must rest on a much more detailed analysis of the possible costs and benefits.

3. The Costs of the Out-of-School ETV System

The Ivory Coast's attempt to take advantage of its newly initiated ETV capabilities by establishing a system of out-of-school education directed toward adult learning was a primary evaluation focus under this contract. In addition to a number of effectiveness and impact studies undertaken, reported on in Chapter II, a rather detailed cost study of the system was accomplished, as reported in Klees (1977). In many respects this cost study is somewhat broader than the ones discussed above, in that more attention is paid to the total societal costs incurred through use of the system, including the costs of animator and audience time and general social cost considerations that cannot be

TABLE 8

SELECTED ALTERNATIVES GOVERNING FIRST CYCLE ENROLLMENTS AND COSTS

Designation of enrollment policy	[1]	[2]	[3]	[4]	[5]	[6]
(a) Rate of access to sixième	30%	44%	44%	50%	50%	50%
(b) Control of repetitions toward the sixième entrance examination	tight (50/50)	loose (80/50)	tight (50/50)	loose (80/50)	loose (80/50)	loose (80/50)
(d) Flow parameters through secondary education	diag. 2	diag. 1	diag. 1	diag. 1	diag. 3	diag. 3
(f) Distribution by educational setting (secondary)	100% inst.	100% inst.	100% inst.	100% inst.	100% inst.	100% inst.
(g) Technology (institutional secondary education)	traditional	traditional	traditional	traditional	traditional	traditional

Designation of enrollment policy	[7]	[8]	[9]	[10]	[11]	[12]
(a) Rate of access to sixième	50%	50%	50%	50%	50%	50%
(b) Control of repetitions toward the sixième entrance examination	tight (50/50)	loose (80/50)	loose (80/50)	loose (80/50)	loose (80/50)	loose (80/50)
(d) Flow parameters through secondary education	diag. 3	diag. 3	diag. 3	diag. 3	diag. 3	diag. 3
(f) Distribution by educational setting (secondary)	100% inst.	100% inst.	80% inst. 20% com.	80% inst. 20% com.	60% inst. 30% com. 10% exten.	60% inst. 30% com. 10% exten.
(g) Technology (institutional secondary education)	w/ media support	media based	traditional	w/ media support	traditional	w/ media support

TABLE 9

GENERAL COST SUMMARY FOR THE FOUR REFERENCE YEARS: 1977, 1980, 1985, 1990

Unit : Billion of CFA F.

Year		Alternatives*											
		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
1977-78	1st cycle of secondary educ.	13.8	14.7	14.7	14.7	12.9	13.2	13.2	8.0	11.3	11.3	9.2	9.4
	Complementary cycle **												
	Total												
1980-81	1st cycle of secondary educ.	17.1	21.6	22.6	22.8	17.7	18.1	19.3	11.4	15.5	15.8	12.8	13.1
	Complementary cycle **	6.8	3.8	5.4	3.5	3.5	3.5	4.9	3.5	3.5	3.5	3.5	3.5
	Total	23.9	25.4	28.0	26.3	21.2	21.6	24.2	14.9	19.0	19.3	16.3	16.6
1985-86	1st cycle of secondary educ.	19.2	36.5	37.2	42.8	34.2	34.6	35.4	24.3	30.0	30.3	25.0	25.3
	Complementary cycle**	13.7	8,1	10.7	7.4	7.4	7.4	9.7	7.4	7.4	7.4	7.4	7.4
	Total	32.9	44.6	47.9	50.2	41.6	42.0	45.1	31.7	37.4	37.7	32.4	32.7
1990-91	1st cycle of secondary educ.	29.6	54.6	54.9	62.8	50.8	51.4	52.1	38.9	44.8	45.4	37.9	38.3
	Complementary cycle**	20.6	12.3	16.0	11.2	11.2	11.2	14.5	11.2	11.2	11.2	11.2	11.2
	Total	50.2	66.9	70.9	74.0	62.0	62.6	66.6	50.1	56.0	56.6	49.1	49.5

* See Table 8, page 77, for identification of alternatives.

** Second Model: net costs

expressed easily if at all, in monetary terms. Additionally, greater than usual effort is devoted towards explaining to decision-makers the conceptual framework economists bring to cost analysis and its practical limitations. Below we explore some of the main results of this analysis.

Two alternative general assumptions are examined: (A) assumes that the out-of-school system builds on some of the slack excess capacity available as a result of an existing formal schooling, and considers the audience and animator time involved as costless to society; and (B) assumes that the out-of-school ETV system was implemented without an existing ETV infrastructure in rural villages and that both audience and animator time have alternative uses of social value and therefore should be costed. Although in some respects assumption A represents an Ivory Coast perspective and assumption B the perspective of other nations who might want to contribute such a non-formal ETV system, Klees cautions that in both cases specific assessments must be made as to how applicable each set of assumptions is to either situation. In particular, if Ivorian audience and animator time have social opportunity costs, then they should be included in the Ivory Coast's cost estimation.

After a detailed component by component analysis of out-of-school system costs under each assumption, Klees provides a number of alternative cost measures which summarize overall system costs from several different perspectives. His Table 8 is reproduced below as Table 10.

As we pointed out earlier, it is difficult to assess the reasonableness of such costs without an integrated analysis of system effects and benefits, and without an examination of alternative strategies that could be used instead of the present system. Realizing that it is difficult

TABLE 10

Summary E/S System Cost Measures[a]

	F CFA
I. Under Assumption A:	
1. Total Cost	263,900,000
2. Average Total Cost/Program Broadcast	6,900,000
3. Average Total Cost/Viewer	17,000
4. Average Total Cost/Viewer/Program Broadcast	450
5. Average Total Cost/Viewer/Hour Broadcast	900
6. Average Production Cost/Program Produced	4,400,000
7. Average Production Cost/Hour Produced	8,800,000
II. Under Assumption B:	
1. Total Cost	568,500,000
2. Average Total Cost/Program Broadcast	15,000,000
3. Average Total Cost/Viewer	37,000
4. Average Total Cost/Viewer/Program Broadcast	965
5. Average Total Cost/Viewer/Hour Broadcast	1,930
6. Average Production Cost/Program Produced	4,400,000
7. Average Production Cost/Hour Broadcast	8,800,000

[a]These measures are derived assuming the parameters values for the 1975-1976 operating year of the E/S system, and a 7.5% social rate of discount for the amortization of capital costs. The term viewer in summary cost measures 3, 4, and 5, refers to N_a = 15,500; that is, we use the average audience/program figure in a sense as a proxy for the size of a captive viewing audience in order to compare costs with formal school system cost/student measures. These measures may also be derived from the information in Table 5 and 6. Measures 6 and 7 include ½ of building and office equipment costs, as discussed on p. 49.

to place an explicit social value on outputs, even when they are known. Klees provides the array of summary measures in Table 10 as a mechanism to allow decision-makers to think about such evaluation questions from a number of different perspectives. For example, measure 2 can be used to ask the evaluative question, "is (was) it worth 6,900,000 F CFA (under assumption A) to broadcast 38 programs to an average of 15,900 persons?" Alternatively, measure 3 can be used to ask the evaluative question, "is (was) it worth 17,000 F CFA (under assumption A) per viewer for an average of 15,900 viewers to see each of the 38 programs broadcast?" Or measure 4 can be used to ask the evaluative question, "is (was) it worth 450 F CFA/viewer/program (under assumption A) for each of an average of 15,900 viewers to see 38 programs?" As the reader can see, each of these questions is simply another way of focusing on the question of the overall worth of the ETV system.

Again, international experience can provide some context for interpretation of the reasonableness of such costs, although the almost complete lack of adequate cost analyses of non-formal educational system projects makes such comparisons even more tenuous than usual. In particular, Klees compares the costs of the Ivorian out-of-school system with those estimated for formal ETV systems, which were reported alone in Tables 6 and 7. Even taking into account the difference between 1972 and 1975 F CFA (Tables 6 and 7 use the former, while Table 10 uses the latter), the costs of the out-of-school system are substantially higher than those for the other projects studied. Klees attributes these differences to three main aspects of the out-of-school system: the relatively small population participating, the smaller amount of programs produced, and the considerably greater expense associated with program production.

Klees next turns to consider the cost impact of a number of policy alternatives open to the Ivory Coast for system expansion and change. Through the estimation of a cost function model of the out-of-school system he examines aspects of the following possibilities: efficiency improvements in an expanded ETV program production process; greater use of repeated broadcasts; alternative means of expanding audience size; increased animator training; changes in the quality and quantity of printed support materials; and expansion of the evaluation efforts. In general, Klees concludes that the marginal cost of expansion or other policy changes is small relative to the average costs incurred to date. If such expansion or changes can result in efficiency improvements, or in greater societal benefits, then they should probably be implemented.

Finally, Klees pays particular attention to the non-monetary social costs that may be associated with the out-of-school system, and the general development context and perspective within which the system is implemented. With respect to the first topic he looks at the issues raised by the following: the choice of the primary school teacher as animator; the choice of the primary school classroom as the educational setting for adults; the nature of the out-of-school programs broadcast; and the introduction of the television medium to rural villages. In general he finds that each of these issues can have negative effects on the operating efficiency of the project and cultural impact that could be considered harmful. Such valuations depend heavily on the development perspective taken and in his concluding chapter Klees examines two such views: one that sees the out-of-school system as necessary for rural modernization, and another which views the passive learning,

top-down approach of the out-of-school system to the needs of rural adults as a propagandistic effort of the existing power structure to maintain a structure of rural dependency. Clearly, such a difference in perspective will greatly affect the consideration of the social costs and benefits engendered by the out-of-school system, and should be explicitly considered by Ivorian decision-makers concerned about the future of their out-of-school education system.

CHAPTER FOUR

RECOMMENDATIONS FOR ACTION

This chapter is composed of two parts: recommendations generated from the economic studies outlined in Chapter Three and recommendations emanating from the out-of-school research reports referred to throughout Chapter Two. The reader will find the organization of these two parts to be different. Recommendations from the economic studies retain the distinctions present in the last chapter: primary schooling; secondary schooling; out-of-school education. Recommendations on ORTV are divided among three levels of significant change. They vary from slight changes not requiring increased financial resources to fundamental rethinking and reorganization which do necessitate more resources.

Economic Studies: Recommendations (Reference to specific study proposing each recommendation is given where possible)

A. Primary Schooling

1. SERIOUS THOUGHT SHOULD BE DEVOTED TO THE ADOPTION OF SOLAR BATTERY POWER AS THE MOST COST-EFFECTIVE MEANS OF SUPPLYING RECEIVERS WITH ELECTRICITY. Continued use of alkaline battery power will soon be prohibitive. By 1990 the estimated cost of solar powered batteries would be 100 times less expensive than alkaline battery alternatives. (Eicher-Orivel, p. 92.*)

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*Page references are to the English versions of the reports cited.

2. NEW CLASSROOM CONSTRUCTION PLANS SHOULD BE SLOWED DOWN DURING 1979-81 AND THE DELAY MADE UP DURING 1982-84. This modified expansion rate would take into account the added financial burden during the substitution phase from the technology of alkaline batteries to that of solar energy. (Richer-Orivel, p. 92-93.)

3. SERIOUS THOUGHT SHOULD BE GIVEN TO THE ALTERNATIVE OF PROVIDING ONE TV RECEIVER TO EVERY TWO CLASSROOMS INSTEAD OF TO EVERY CLASSROOM. The Architecture Service has developed and costed a pivotal structure which could constitute a significant cost-saving factor, as long as the incremental cost of classroom improvements is significantly lower than the sale price of one receiver. (Richer-Orivel, pp. 93-94.)

4. IT IS UNLIKELY THAT COLOR PRODUCTION CAPABILITIES CONSTITUTE A SENSIBLE ALTERNATIVE FOR THE ETV PROGRAM AT THIS TIME. This recommendation is made, given the dubious educational benefits of color production reported in the research literature and the present inadequacies of the Ivorian transmission system for diffusing color programming. (Richer-Orivel, p. 94.)

5. THE SUGGESTION TO REDUCE CLASSROOM SIZE FROM 44 TO 42 PUPILS SHOULD SERIOUSLY BE RECONSIDERED. This alternative would be costly, and, according to the literature on the pedagogical effects of class size, is of little, if any, educational benefit. (Richer-Orivel, pp. 94-95.)

6. The high costs of printed support materials prompt three recommendations: THE PRINTING FACILITIES AT BOUAKE SHOULD BE PUT TO ADDITIONAL USES; THE VOLUME OF PRINTED MATERIALS SHOULD BE DIMINISHED; THE LIFE SPAN OF THE PRINTED MATERIALS SHOULD BE LENGTHENED. (Eicher-Orivel, pp. 95-96.)

7. THE EFFICIENCY OF THE ETV PROGRAM PRODUCTION SYSTEM NEEDS TO BE REEXAMINED MORE CLOSELY TO SEE IF IMPROVEMENTS IN OUTPUT CAN BE GENERATED. In particular, the use of current ETV production facilities for other than primary school production, a subject which has been much discussed, should be postponed until the production system has implemented needed reforms. (Evans-Klees, p. 69.)

8. The issue of Ivorization in the ETV program raises serious cost and organizational questions, specifically leading to the following two recommendations. COST PROJECTIONS MUST BE REVISED TO THE EXTENT THAT IVORIZATION WILL NOT BE COMPLETELY ACHIEVED BY 1980. MORE ATTENTION IUST BE PAID TO THE ORGANIZATION AND EFFICIENCY OF THE IVORIZATION PROCESS. (Evans-Klees, p. 63.)

9. Analysis of costs alone is an inadequate basis for decision-making. THE INFORMATION PROVIDED IN COST STUDIES MUST BE INTEGRATED WITH EFFECTIVENESS AND BENEFIT DATA. SUCH ANALYSES WOULD BE CONSIDERABLY MORE USEFUL IN THE FUTURE IF UNDERTAKEN TOGETHER IN THE SAME STUDY RATHER THAN SEPARATELY.

B. Secondary Schooling

1. The hypothesis has been advanced that due to the heavy television component in primary education, the graduates of this system will have difficulty adapting to a different learning environment in secondary school. IT IS LIKELY THAT ETV GRADUATES WILL ADAPT REASONABLY WELL TO ANY SENSIBLE LEARNING ENVIRONMENT; CONSEQUENTLY NO OVERDUE CONCERN IN FAVOR OF ETV EDUCATION SHOULD BE DIRECTED TOWARD THE DESIGN OF THE CONTENT AND STRUCTURE OF SECONDARY EDUCATION. (Danière-Orivel).

2. The educational delivery technologies that are possible should not be viewed as mutually exclusive. SUBSTANTIAL BENEFITS ARE LIKELY TO RESULT IF DIFFERENT TECHNOLOGIES ARE SPECIFICALLY DESIGNED FOR DIFFERENT POPULATION SUB-GROUPS, EVEN FOR THE TEACHING OF AN IDENTICAL CURRICULUM TO DIFFERENT GROUPS. (Danière-Orivel).

3. Given the likely costs of secondary school system expansion, it is probably not defensible to expand post-primary educational opportunities through the use of regular secondary schooling only. A COMPLEMENTARY CYCLE, THAT FOR THE MOST PART DOES NOT LEAD TO HIGHER EDUCATIONAL LEVELS, SHOULD BE ESTABLISHED AT A COST WHICH IS SIGNIFICANTLY LOWER THAN THAT OF THE TRADITIONAL SYSTEM. (Danière-Orivel).

4. THE ORIENTATION OF THE COMPLEMENTARY CYCLE SHOULD BE SPECIFICALLY TOWARD USEFUL, EMPLOYABLE SKILLS. This would mean attention towards the needs of those less skilled positions in the private industrial sector for which a shortage is forecast, and most especially, towards agricultural needs, since it is this section of the economy that employs most individuals. (Danière-Orivel).

5. Given the pressure for the expansion of secondary schooling, the expensive expatriate teaching force can no longer be maintained. THEREFORE TEACHER TRAINING POLICIES IN THE IVORY COAST MUST BE REVISED AND ALTERNATIVE TECHNOLOGIES MUST BE SOUGHT TO SUPPLEMENT A LESS TRAINED LOCAL TEACHING CAPABILITY. (Danière-Orivel).

6. GIVEN THE RECOMMENDATIONS ABOVE, WHICH WOULD LIKELY LEAD TO A RATHER DIVERSE PACKAGE OF POST-PRIMARY SCHOOLING ALTERNATIVES, CONSIDERABLE ATTENTION MUST BE DEVOTED TO THE QUESTION OF EQUITY; IN PARTICULAR, IT IS VERY EASY TO CREATE SECOND-CLASS INSTITUTIONAL STRUCTURES AND DEGREES: The access policies and general structural features of the system should be closely examined with respect to equity as well as efficiency. (Danière-Orivel).

7. CONTRARY TO CONVENTIONAL WISDOM, IT MAY BE MORE EFFICIENT AND EQUITABLE TO ALLOW STUDENTS, WHO FAIL SECONDARY SCHOOL ENTRANCE EXAMINATIONS, CHANCES TO REPEAT THESE EXAMS. This recommendation would especially hold true if in between the failure and

the re-examination some specific more individualized attention to their learning needs is given. This may be possible within the framework of a complementary secondary school cycle. (Danière-Orivel).

8. The two working documents of McAnany and Wells and the Danière-Orivel secondary school report represent preliminary attempts to deal with certain problems. They should be supplemented by more extensive examination of the issues involved.

C. Out-of-School Education

1. ETV program production in the out-of-school system needs to be looked at more closely in terms of its organizational efficiency. IN PARTICULAR A STREAMLINING OF THE FINAL DISBURSEMENTS PROCEDURES AND A REDUCED RELIANCE ON BORROWED PERSONNEL AND EQUIPMENT, ALTHOUGH RAISING TOTAL SYSTEM COSTS, MAY BE ABLE TO INCREASE PROGRAM OUTPUT SIGNIFICANTLY, AND THUS PERHAPS LOWER AVERAGE COSTS PER VIEWER AND PER PROGRAM. (Klees, p. 89-91, 99.)

2. ALTHOUGH CURRENT POLICY IS NOT TO PAY ANIMATORS FOR THEIR SERVICES (IN ADDITION TO THEIR REGULAR PRIMARY SCHOOL TEACHER SALARY), IT MAY BE WORTHWHILE TO RECONSIDER THE ISSUE. The current policy clearly has some justification, given that teachers are now earning high salaries, about 10 times the average GNP per capita. Nonetheless, there may be considerable difficulty in getting animator/teachers to expand or even maintain their current level of effort without additional pay.

Moreover, it is likely that one main reason for the restricted total audience size and weak follow-up actions is the lack of strong motivation on the part of these animators, who on the average open their schools for only one-third of the programs broadcast. (Kleen, pp. 52-55, 104-105.)

3. ALTERNATIVELY, GIVEN THE MARGINAL ROLE OF THE TEACHER IN ADULT VILLAGE LIFE AND IN THE RURAL DEVELOPMENT INFRASTRUCTURE, IT MAY BE WISE TO CONSIDER ALTERNATIVES TO TEACHERS AS ANIMATORS. (Kleen, pp. 69-71.)

4. CONSIDERABLE SERIOUS THOUGHT MUST BE GIVEN TO THE MANY UNINTENDED CULTURAL COSTS THAT MAY FOLLOW FROM A MASSIVE INTRODUCTION OF THE TELEVISION MEDIUM INTO RURAL AREAS OF THE COUNTRY. (Kleen, pp. 72-75, 100-106.)

Recommendations for OSTV

Introduction

The recommendations concerning OSTV will be presented under three separate headings representing, first, relatively small changes that OSTV could undertake without major budgetary or administrative revisions. The second set of recommendations touches on changes that go beyond the current mandate of OSTV and involve important additional allocations of resources within the Ministry of Primary and Television Education, but does not essentially change the nature of OSTV. The third set of recommendations demand higher decisions to be made and

affect in a major way OSTV organization and operations. A final note: all of the recommendations made here are meant to be realistic suggestions for action and not merely normative statements on how things ought to be. Some obviously take much more effort and resources than may be currently available. The variety of suggestions is also meant to offer some alternatives to Ivorian decision-makers to do what they can to improve the out-of-school television system. These recommendations are the result of discussions among six researchers at Stanford and one in Washington. It is the shared opinion of those involved in the evaluation that a number of changes in OSTV operation is necessary if TPT programs are to achieve the goals outlined in Chapter III above. If no major effort is made by the Ministry of Primary and Television Education to put at least a number of the first level recommendations into practice, there is a serious probability that audiences will continue to decline, schools will be opened for OSTV less and less, audiences will not be animated as much, and consequently the potential advantages OSTV could render to rural or urban audiences will be minimal. But our own inclination is toward recommendations of the Second and Third levels, since it is difficult to see how OSTV can affect the lives of rural people without such an effort. Most of the recommendations grow out of those made in research reports already alluded to in Chapter II (Fritz, 1976; Lenglet, 1976; Benveniste, 1976; Grant and Seya, 1976; Grant, 1977; Etaix and Lenglet, 1977; Seya and Yao, 1977).

1. First-level changes

Recommendations made under this heading would require neither

major budget increases nor structural changes in OSTV, but, if implemented, might improve considerably the delivery of messages and consequent learning and action. These recommendations are aimed at OSTV and Ministry decision-makers.

A. Programming

1) Schedule programs so that a series is coherent and not broken up by large time gaps; if schedules change, notify animators and the public in timely fashion through several channels (e.g., inspectors, radio, TV, press).

2) Schedule longer series on a single topic like the water series so that people will have a chance to learn about the topic over a longer period and see it from a number of points of view; also village development agents would have a greater likelihood of being involved.

3) Rerun series or at least parts of series that have been more popular with audiences (based on sound feedback evidence); this can save money and reinforce learning.

4) Perform more frequent, regular, and detailed assessment of spectator needs which can be appropriately addressed by TV program series.

5) Accelerate effective training on the program production level by recruiting filmmaking advisors as opposed to filmmakers from technical assistance sources.

B. Institutional Collaboration

6) Encourage other institutions to do less frequent but longer series that would coincide with a particular campaign that they are promoting at the time (e.g., water, animal husbandry, vaccination series).

7) Request the collaborating institution to inform their field agents of the series and to order them to collaborate with the TPT animator in the discussions and make available resources for follow-up action.

8) Obtain support for CSTV from regional and local administrative authorities, such as sub-prefects and PDCI under-secretaries and delegates, through visits, involvement in CSTV programming and in programs themselves.

9) Increase involvement of local village leaders (chiefs, elders, PTA president) in the general responsability for the success of CSTV, by frequent consultations between teacher/animators and these figures, visits to them by national and regional administrative authorities who insist on the importance which the government attaches to CSTV.

C. Reception

Improving the animation of primary school teachers is one critical component of "reception" for which there seem to be four possible solutions: a) giving animators extra pay; b) counting animation as extra

work and giving some equivalent time off from other school duties (depending on schedules); c) getting teachers to volunteer and giving them some special recognition, training, prestige rewards; d) increasing the supervision of animation in a more coercive way.

10) Give animators some relief from other school duties and/or provide them with special recognition and training within the primary system (animation as part of a consideration for promotion, etc.)

11) Provide annual animation training courses for teachers of at least a week and back up animators with help during year from animation counselors.

12) Provide printed materials on time to animators.

13) Inform public of TPT broadcasts with radio spots just previous to broadcast and encourage animators to use a variety of means for informing local audiences.

14) Broadcast TV programs on schedule and without delays.

D. Follow-up Action

15) Clearly indicate in TPT programs when action is called for and suggest concrete steps to be taken.

16) Encourage animators to contact relevant development agents in their village or from those nearby as well as requesting the sponsoring agency to direct their field agents' efforts in such action (as suggested in recommendation 7 above).

2. Second-level changes

These recommendations call for more serious changes requiring a significantly increased budget and some restructuring of OSTV but still maintaining the essential structure as it now exists. It needs to be emphasized that these following recommendations call for a serious commitment on the part of the Ivorian government to the goals of rural adult education, rural social and economic change and the use of mass media to achieve these ends.

A. Programming

1) Promote a serious rethinking of OSTV programming with the hiring of trained adult education specialists, who would provide a serious, pedagogical base to programming in content development and instructional design.

2) Divide OSTV programming into separate categories serving different interest groups: rural adult information programs (like TPT has been), adult literacy classes to support on-going or new literacy efforts, and post-primary training for graduates not in secondary school (Cf. McAnany, 1976; Danière and Orivel, 1977); this would require more TV time, perhaps 3-4 hours a week but not all at prime time.

B. Reception

3) Pay teacher-animators and provide serious training as suggested in recommendation number 11 in first-level changes.

4) Have teacher-animator train a village-selected person to assist and eventually take over TPT animation sessions (in 1 or 2 years) while teachers concentrate on literacy or post-primary classes.

5) Hold an annual information campaign concerning OSTV programs each September, through newspaper, radio and television; request FDCI, other collaborative ministries and government agencies and local and regional voluntary agencies to promote participation through their local agents like prefects, FDCI under-secretaries, and local development agents.

C. Institutional Collaboration and Follow-up Action

6) Insist on collaborating agencies who advocate action that the necessary follow-up of technical agents and material are available following TPT programs.

7) Approach those agencies (no more than two or three a year) that are mounting large-scale campaigns and offer to collaborate on TPT series.

8) Have teacher-animators or village animators work closely with agents to promote suggested activities; also have them work with village authorities to back campaign and TPT series action goals.

9) Encourage collaborating institutions to foresee a line item for "OSTV Collaboration" in their annual budget submissions (necessary two years in advance before any effect is felt).

3. Third-level actions

The choices for OSTV at a third level would involve serious rethinking and restructuring of both OSTV and other agencies like ONPR within other institutions like the Ministries of Information, Agriculture and Health in order to create a serious rural information and education service. This assumes, of course, choices of the government to place priority on rural development and the services to the rural areas. In such a scenario OSTV might remain within the Ministry of Primary and Television Education but its functions would change. It would take too much space to develop in full the possible changes but a brief list of general objectives and means would suggest the direction of change.

1) The central government would place a high priority on the development of rural services, agricultural productivity and the basic needs of rural people for food, shelter, clean water sources, health and education.

2) Place all of the rural information service (this would include much of the TPT series, similar activities of ONPR, and the Ministry of Information's National Cup of Progress and the farmers programs of the Ministry of Agriculture) under a single administrative body so that all of the information needs of rural people are coordinated and do not compete or overlap.

3) Use a combined communication system of mass media (including a mixture of television, radio and printed materials) with a well developed cadre of village animators chosen by the population

and trained in animation; these would in turn be connected with the various technical agents from different ministries.

4) Mobilize the rural population through the combined communication system according to the different well defined goals and within different target or interest groups (women, school dropouts, landless laborers, etc.)

5) Achieve this mobilization through a campaign format that would concentrate attention on different goals at different times.

6) Use OSTV within the Ministry of Primary and TV Education to specifically use the media of television and radio with trained teachers to concentrate on more instructional and training goals such as a national literacy campaign and large-scale post-primary training for primary graduates not continuing to secondary schooling.

7) Create an autonomous budget for OSTV, allowing it to function effectively as a production agency, and institutionalize partial funding for TV programs by collaborating organizations.

These are the recommendations which the research team submits for the consideration of the Ivory Coast government. They involve either a more efficient allocation of current resources, or under increased financial support, a rethinking and restructuring of out-of-school educational policy. Even under recommendation levels 2 and 3 some savings could be made through less duplication of effort and more

effective coordination of national policy. The nature of the problem which the OSTV department has been addressing in its programs concerns the mandates of several Ministries and development agencies. Therefore, improvement of OSTV programs, which was the purpose of the research that has led to the preceding conclusions and recommendations, should ultimately be the concern of the whole Ivory Coast government.

TRAINING EFFORTS IN THE USAID CONTRACT

The USAID Contract called for the training of Ivoirian personnel in the area of educational technology and communications. This training was to help the work of the Evaluation Unit established within the Ministry of Primary Television Education. The training has taken place at three levels, as noted below.

1. Graduate Program at Stanford University

Three graduates of the University of Abidjan were recruited for the Evaluation Unit in late 1975. Two were graduates of the Ethno-Sociology Department, and one from Economics. They worked in the Evaluation Unit on various research projects, reported in Benveniste (1976, and in Seya and Yao (1977), and acquainted themselves with the Primary ETV system, as well as the Out-of-School Television Project. They applied and were accepted by Stanford University in the Institute of Communication Research's MA program in research (two sociologists) and in the School of Education for Educational Economics (one economist).

Their courses of studies began in June 1976, with a two-month intensive English course at Stanford. All three passed the course with distinction, and were not required to do more remedial English. In September, all three began full credit courses in their respective areas. By early 1978, all three were finishing requirements for their MA degrees (excepted in June, 1978). Two in Communications were completing theses, one having returned in the Fall Quarter of 1977 to gather new data on learning achievements in the OSTV program, the

other using data already generated by field work completed in 1977 for his thesis. No thesis is required for an MA in educational economics. All three candidates worked on data analysis and report writing that constituted Stanford's part of the evaluation work.

2. Training of Intermediate Researchers in the Evaluation Unit

Two primary school teachers were assigned to the Out-of-School section of the Evaluation Unit at the end of 1975. By collaborating with the two permanent expatriate researchers, the three University of Abidjan graduates and two short-term researchers from Stanford University, they received in-service research training. They participated in the Four Village Study reported in Benveniste (1976), in the research training workshop for field personnel in April 1976 (see Part 3 of this Appendix), and they were actively involved in the formulation of the research instruments, the pretesting, the actual interviewing, the coding, and the analysis stage of the 1977 surveys reported in Etaix and Lenglet, 1977. In early 1977, a third person joined these two intermediate researchers. She participated in interviewing during the 1977 surveys and in data coding.

For the 1977 surveys, three additional intermediate researchers from the OSTV research department were loaned to the Evaluation Unit. They received the same in-service training and performed the same research tasks as the two Evaluation Unit researchers.

3. Training Field Personnel

During the training seminar for TPT in September 1975, about 60 animators received basic instruction in survey interview techniques

as preparation for their participation in the research reported in Jouët (1976). This introductory training was organized by the OSTV in collaboration with the Evaluation Unit.

The Evaluation Unit organized a research training workshop in Bouaké in April 1975 in preparation for three field surveys dealing with mass media access and exposure, and the impact of the TPT housing series (both reported in Seya and Yao (1977)), and the TPT credit and savings series. For this workshop 30 teachers-animators, who had received introductory training in September 1975, were re-invited as well as ten ACRI's (Regional Pedagogical Counselors) who had been designated as field evaluation agents of the Evaluation Unit. These 40 people were introduced to and discussed research principles and designs, as well as different research methods and techniques. They received practical training by pretesting actual research instruments.

The service of 9 of the 10 ACRI's was solicited again for the 1977 surveys. Instead of a central training workshop, each of them received individual instruction prior to the start of the first survey. The performance of many of the field personnel was not entirely adequate because of the lack of immediate supervision. It is recommended that more intensive training and close supervision are made integral elements of the work of the Evaluation Unit.

Appendix B

REPORTS PRODUCED UNDER THE USAID CONTRACT

No.	Title	Date	Authors	English/French
1	The reception and animation of out-of-school educational television programs in the Ivory Coast: a case study of four villages	1976	Annie Benveniste	E, F
2	The impact of 25 television programs on "water" produced and broadcast by the Ivorian out-of-school education project	1976	Frans Lenglet	E, F
3	Visits to 23 villages to determine the impact of the water series produced by the out-of-school TV department	1976	Stephen Grant and Pierre Thizier Seya	E, F
4	Secondary school alternative in the Ivory Coast: considerations	1976	Emile McAnany	E
5	Labor markets and social demand for education: an analysis of the Ivory Coast	1976	Stuart Wells	E
6	ETV program production in the Ivory Coast	1976	Stella Evans Steven Klees	E, F
7	Les causes de la faible participation des villageois aux émissions "TELE POUR TOUS"	1976	Faustin Kouadjo Yao	F
8	A cost analysis of instructional television in the Ivory Coast	1976	Steven Klees Dean Jamison	E, F
9	Television for the rural African village: studies of audiences and impact in the Ivory Coast	1977	Pierre Thizier Seya Faustin Kouadjo Yao	E, F
10	Rural adult education and the role of mass media: a comparative analysis of four projects	1977	Frans Lenglet Emile McAnany	E, F

Appendix B
(Cont.)

11	An administrative history of out-of-school educational television in the Ivory Coast	1977	Stephen Grant	E, F
12	"TELE POUR TOUS" in rural Ivory Coast: audience, impact, perceptions	1977	Mireille Etaix Frans Lenglet	E, F
13	Cost analysis of non-formal ETV systems: a case study of the "extra-scolaire" system in the Ivory Coast	1977	Steven Klees	E, F
14	Cost analysis of the primary instructional television program in the Ivory Coast	1977	Jean-Claude Eicher François Orivel	E, F
15	Post-primary options in the Ivory Coast	1977	André Danière François Orivel	E, F
16	On needs assessment of out-of-school educational television in the Ivory Coast	1978	Stephen Grant	E
17	Final Report: Economic studies and out-of-school education program evaluation for the Ivory Coast	1978	Stephen Grant Steven Klees Frans Lenglet Emile McAnany	E, F

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